

A CHAPTER OF CHILD HEALTH

CLARKE COUNTY AND ATHENS
GEORGIA 1924 - 1928

LANE MEDICAL LIBRARY STAMFORD OLD
1609 .C72 1930
A chapter of child health.



24503194803



GIFT
Dr. W. Ophüls

A CHAPTER OF CHILD HEALTH

REPORT OF THE COMMONWEALTH FUND
CHILD HEALTH DEMONSTRATION
IN CLARKE COUNTY AND ATHENS, GEORGIA

1924-1928

NEW YORK

THE COMMONWEALTH FUND
DIVISION OF PUBLICATIONS

1930

455

COPYRIGHT, 1930, BY
THE COMMONWEALTH FUND
DIVISION OF PUBLICATIONS

PUBLISHED APRIL, 1930

PRINTED IN THE UNITED STATES OF AMERICA



CONTENTS

PART I. THE COMMUNITY AND THE PLAN

<i>Chapter I</i>	THE COMMUNITY	I
<i>Chapter II</i>	THE HEALTH PLAN	7

PART II. WHAT HEALTH WORKERS DID

<i>Chapter III</i>	FOR THE COMMUNITY	13
<i>Chapter IV</i>	FOR SCHOOL CHILDREN	31
<i>Chapter V</i>	FOR BABIES AND YOUNG CHILDREN	73
<i>Chapter VI</i>	FOR MOTHERS	91

PART III. A MEASURE OF PROGRESS

<i>Chapter VII</i>	APPRAISAL OF PUBLIC HEALTH PERFORMANCE	103
	<i>By W. F. Walker, D.P.H.</i>	

PART IV. THE COMMUNITY'S RESPONSE

<i>Chapter VIII</i>	PUBLIC ATTITUDES	129
<i>Chapter IX</i>	OFFICIAL ACTION	139

APPENDICES

<i>Appendix A</i>	PERSONNEL AND COMMITTEES	149
<i>Appendix B</i>	STATISTICAL SUMMARIES	151

CHILD HEALTH DEMONSTRATION COMMITTEE

BARRY C. SMITH, *Chairman*

PHILIP VAN INGEN, M.D., *Treasurer*

DONALD B. ARMSTRONG, M.D.	LIVINGSTON FARRAND, M.D.
ROBERT E. CHADDOCK, PH.D.	SAMUEL McCLINTOCK HAMILL, M.D.
L. D. COFFMAN, PH.D.	SALLY LUCAS JEAN
W. F. DRAPER, M.D.	BARBARA S. QUIN

MILDRED C. SCOVILLE

COURTENAY DINWIDDIE, *Director*

CLARKE COUNTY-ATHENS CHILD HEALTH DEMONSTRATION COMMITTEE, 1928

J. W. BARNETT	PERCY JOHNSON
W. HARVEY CABANISS, M.D.	CHARLES E. MARTIN
M. J. COSTA ¹	M. G. MICHAEL
ALONZO DUDLEY	MRS. A. S. PARKER
A. S. EDWARDS, PH.D.	MRS. R. S. POND
ANDREW COBB ERWIN	JERE M. POUND, LL.D.
WILLIAM L. ERWIN	MRS. J. P. PROCTOR
C. D. FLANIGEN	N. G. SLAUGHTER, D.D.S.
LINTON Gerdine, M.D.	A. M. SOULE, LL.D.
HUGH H. GORDON, JR.	S. J. WARE, D.D.S.
MRS. T. F. GREEN	GUY O. WHELCHER, M.D.

T. F. ABERCROMBIE, M.D., *State Health Officer, Honorary Member*

B. B. BAGBY, M.D., *Health Commissioner, Clarke County and Athens*

G. G. BOND, *Superintendent of Schools, Athens*

BERNARD W. CAREY, M.D., *Director, Child Health Demonstration*

¹Deceased

FOREWORD

DURING the five years 1924-1928, by subsidy and technical service, the Commonwealth Fund aided in the expansion and strengthening of public health work in Clarke County, Georgia, and its county-seat, Athens. This aid took the form of a child health demonstration similar to those conducted by the Fund in Fargo, North Dakota; Rutherford County, Tennessee; and Marion County, Oregon.

Forty southern communities applied for such a demonstration when it was offered by the Fund, and the awards to Athens and to Rutherford County were made in the face of active competition from at least thirty of them. Planned as a city project, the work in Athens was at once extended to the surrounding county in so far as the larger area was already served by the health officer, who was primarily a county official. For the first three years of the demonstration, therefore, medical and nursing services were organized on a county basis, while school health education was concentrated in the city in cooperation with the Athens Board of Education. In 1927 a change of administration in the county schools led to a request that similar service be given there, and the local demonstration committee approved the formal expansion of the demonstration, in all its phases, to cover the county.

The report which follows includes a description of the health activities which were demonstrated, a record of their measurable results, and a brief chronological account of the community's share in the enterprise. The field secretary of the American Public Health Association contributes a chapter of formal appraisal of the health service rendered.

CHAPTER I

THE COMMUNITY

Clarke County, population 24,000, is in north-eastern Georgia. Athens, its county-seat, has 16,000 population. More than half the residents of the county are white millhands and Negroes living for the most part in poverty. A full-time health officer, beginning work in 1920, had begun a progressive public health program before the demonstration was opened in 1924.

ATHENS, the county-seat of Clarke County, lies 73 miles northeast of Atlanta. It is literally a university town: it grew up around the University of Georgia, established in 1801, which sold piece by piece, from its original holdings, the land on which the city stands. It is host during the academic year to some three thousand students at the university, the State College of Agriculture and Mechanic Arts, the State Teachers College, Lucy Cobb Junior College, and Knox and Gerald Institutes for Negroes. In appearance, like other old southern towns, it runs the gamut from tall pillared houses on broad streets to squalid cabins perched on barren clay-banks. It lives by functioning as an educational center for the state, a trading and distributing center for some 300,000 people of the northeastern counties, and as a manufacturing town. Clarke County, only 114 square miles in area, throws a belt of small cotton farms around the city and includes a few mill villages.

The population of the county, during the demonstration period, stood at approximately 24,000, with some recession during the middle years owing to a temporary drift of white residents to Florida during the boom and some migration of Negroes to the north. Among the 8,000 who live outside the city, the Negroes outnumber the whites two to one. Most of the rural inhabitants are tenant farmers. The city population of 16,000 includes 10,000 whites and 6,000 Negroes, and the white population is sharply divided both economically and socially into two groups—one employed in the mills, and one including the professional men, business executives, merchants, small tradesmen, and mechanics who pay taxes and carry the responsibility for the conduct of community affairs.

Perhaps half of the total white population looks for support to the wages paid by cotton mills, hosiery and cord

mills. This group is segregated in mill villages or mill districts of the town, living chiefly in company-owned houses, clannish, suspicious of strangers, shifting often from house to house and from mill to mill, passive and unprogressive by temperament, irregularly employed, and pinched by the low wages that are characteristic of the industry. It is almost the invariable practice for all the able-bodied members of the family over fourteen years of age—often including the mother—to work in the mill.

The Negroes are for the most part tenant farmers, laborers, and domestic servants. They are beginning to enter the skilled trades—such as carpentry—and are in general improving their position. White leaders often appear to take more interest in the Negro and his problems than in the millhand; an interracial committee has concerned itself with Negro progress; school authorities have provided better facilities for colored children than are found in many cities; there is intelligent leadership among the colored people. The Negro benefits by the persistence of a feeling of personal responsibility for his welfare dating in some measure from slave-holding days.

By contrast the millhand is thought of as an itinerant and a stranger, also of inferior grade, for whose relief in distress the mill-owner may or may not be responsible. The wife of an official of the largest mill has done much welfare work, as a volunteer, among this particular group of employees; night schools, the Young Men's Christian Association, and the Red Cross have done something to ameliorate the condition of the group as a whole; but there has been little effective community effort to deal with the vicious circle of poverty, ignorance, inefficiency, and continued poverty in which these unfortunate American workers, of "pure Anglo-Saxon" blood, are caught.

The pattern of the community falls, therefore, into

several clearly-marked segments: a university group; a group of five or six thousand white townspeople; a rural group of white farmers, mostly tenants and hence loosely attached to the community; and two large groups which, in town and country alike, are almost universally burdened by poverty and are not expected to do much for themselves—the white millhands and the Negroes.

Early Health Work

Clarke County was the only community among the four selected for Commonwealth Fund child health demonstrations where a full-time health officer was already at work. There was, in fact, a long history of public health service on a limited scale. A sanitary inspector was at work before 1908, a city Board of Health was set up in that year, a county Board of Health followed in 1909, regulations had been adopted for the control of communicable diseases and of the milk supply, bacteriological service was provided in cooperation with the university, and for part of a year, in 1913-1914, there was even a Board of Health nurse, whose activities were not wholly welcome to some of the local physicians. In 1920 the county chapter of the Red Cross arranged for a community survey which resulted in the employment of a full-time county health officer.

This appointment began a new era of development. The health work of the city and county was conducted virtually as a unit, though formal consolidation of the city and county boards of health did not come about until 1926. The health officer, well-trained and progressive, began building up his staff. Two sanitary inspectors were already at work in the city¹; a county inspector was now added with help from the United States Public Health Service, which also con-

¹One concerned chiefly with street cleaning and garbage removal, which were the responsibility of the Board of Health until 1924.

tributed to the salary of the health officer in accordance with its policy of cooperation with county health units. In 1921 the county Board of Health employed a nurse who had begun work in 1920 at Red Cross expense; she undertook a generalized service of wide range which laid some foundation for later developments in health supervision and education. At the request of the city Board of Education, the health officer began regular annual examinations of school children—though these were necessarily rapid, and without an adequate nursing staff little follow-up work could be done. The handling of vital statistics was greatly improved, and vigorous measures were taken to control communicable disease, with notable results particularly in the case of typhoid fever. Sanitary conditions in the city were bettered. Inspection of meats, the oversight of retail distribution, and the examination of food-handlers protected the food supply.

Medical and dental service in Athens was chiefly on a generalized basis, and the individual practitioners had made little effort to interest their patients in preventive service. Two general hospitals, both privately administered, served the community: at one a rudimentary out-patient department was run by volunteers from the staff. There was no professional social work. A Metropolitan Life Insurance Company nurse was available for home visiting to policyholders. A county tuberculosis association employed a nurse as full-time executive; its work will be discussed later in the pages devoted to tuberculosis control.

While public health services had been well begun, and were growing, before the demonstration was organized in 1924, there was no comprehensive plan of health development before the community, and further progress was severely limited by the lack of a sufficient staff. Plan and staff were offered by the demonstration, which began work in 1924

upon the invitation of the health officer, the chancellor of the University of Georgia, the president of the State College of Agriculture and Mechanic Arts, the president of the State Normal School, the secretary of the Parent-Teacher Association Council, the secretary of the Tuberculosis Association, committeemen from the Rotary Club, Kiwanis, and Chamber of Commerce, and twenty-three physicians.

CHAPTER II

THE HEALTH PLAN

During the demonstration an enlarged public health staff offered the public new services, stressing preventive medicine and health education, and designed to strengthen both the health department and the private practice of medicine and dentistry. These services were introduced with the official approval of local authorities and after informal counsel with community leaders.

THE community public health plan which the demonstration sponsored was intended to develop and to tie together, under health department leadership, all the resources of Clarke County for the promotion of health—particularly the health of children. Some of these resources had not been previously recognized; some had to be materially strengthened before they became fully useful. Thus the school teachers were already aware that the school might affect children's health favorably, but neither they nor the parents of the children they taught had found out how best to make this happen. Doctors and dentists were caring for their patients, but neither had grasped the opportunity of systematic preventive service, particularly among children. The community knew that a nurse was useful, but had no experience of a nursing service sufficiently complete to make a real impression on the general health.

The new program had three broad aims:

1. To increase and intensify the service of the health department in all its more familiar fields.
2. To establish health supervision for children from the prenatal period through the school years—that is, to conserve children's health by suitable medical and nursing care.
3. To educate mothers, children, and the community generally—particularly school children—in healthy living.

To accomplish these purposes as rapidly as possible, the health personnel of Clarke County and Athens was promptly enlarged—partly through the addition of health workers who were needed for permanent service, partly through a temporary loan of other workers who were trained in program planning and educational leadership. Some workers of the first sort were employed by the health department, some by the demonstration. All the workers of the second sort were employed by the demonstration.

The demonstration staff, as originally employed, included the following persons:

A director, to coordinate all its activities and to represent the Commonwealth Fund in its dealings with the community.

A pediatrician, to assist the health officer in purely medical services and to demonstrate to local physicians and parents sound methods of preventive medicine for children.

A director of nursing and three staff nurses.

A health educator¹ with two assistants, one specializing in physical education and the other an oral hygienist, to develop the health resources of the schools.

A statistician and a group of clerks, to assist the health officer in the development of vital statistics and to keep accurate records of demonstrated services.

At the same time the city Board of Health employed a nurse. The city nurse, the county nurse, and the three demonstration nurses thus made up a staff of five, under administrative leadership of the director of nursing. The Board of Health (with brief help from the demonstration) also employed a laboratory technician on full time to replace a part-time worker. The Board of Health continued to employ its full-time health officer, two sanitary officers, and a clerk.

This enlarged staff, operating to a great extent as a unit (though the health department and the demonstration were administratively distinct), was then able to put into effect a broader health program than had ever before been attempted in Clarke County. The most important new elements of this program were these:

1. A generalized nursing service covering the city and county and including home visiting for health supervision, for maternity care, for the control of communicable diseases, and for the care of the sick.

2. A system of health supervision for infants and preschool

¹ Paid partly by the Athens Board of Education for five school years beginning in 1924-1925.

children which was based on frequent medical examinations of well children at several convenient health centers, supplemented by home teaching and follow-up by the nurses.

3. A system of health supervision for school children which was based on periodic medical and dental examinations, some prophylactic treatment by the oral hygienist, daily health inspection by the teachers, daily visits to city schools by the nurses, prompt exclusion from school of children suspected of communicable diseases, consecutive attention by teachers and by nurses (in home visits) to children needing medical or dental treatment or other special care.

4. Health education for school children, based on the practice of good health habits, constant attention to health in school sanitation and classroom routines, the orderly development of health information in formal and informal teaching, and planned, supervised play.

5. Health education for mothers through nursing visits in pregnancy, through frequent contact between health workers and Parent-Teacher Associations, and through teaching child care to future mothers in the upper grades of school.

6. The gradual strengthening of community resources to meet specific public health problems, such as the correction of defects in poor children, the care and control of tuberculosis, the treatment of venereal disease, and the safeguarding of midwife service.

In its relation to practising physicians and dentists, the demonstration was governed by a definite statement of policy (forming a written agreement in the case of the Medical Society) which pledged the demonstration to "protect and preserve the professional interests of the private practitioner." It was agreed that:

The demonstration comes not as a competitor in the field of curative medicine nor to perform the functions of the local Board of Health, but rather to assist in the formation of a well-rounded program of public health activities for mothers and children which will result in a healthier, happier, and more prosperous community.

Medical and dental policies were first presented to the doctors and dentists for informal discussion and usually for formal approval. The demonstration drew a sharp

line between health supervision and treatment and regularly referred all cases where treatment was needed to private practitioners or to the community institutions—such as the out-patient department of the Athens General Hospital—which the doctors had set up to care for the indigent. Except that it was often necessary to urge parents and children to see their doctors and dentists more often than they were accustomed to do, demonstration workers scrupulously kept their hands off the relations between practitioners and their patients.

Even in the matter of health supervision, which was as new to most of the local doctors as it was to most of the public, the demonstration policy was not to set up permanent public services for infants and preschool children, but to demonstrate methods of preventive medicine only to the point where such services could and would be performed by family physicians for their own patients. Health supervision for school children was on a different footing: this is almost universally recognized as a public function, and the Athens schools had already committed this duty to the health officer.

Nursing services, both for health supervision and in connection with medical treatment, were offered to the community without respect to the financial status of the family visited, but when a nurse gave care to the sick she worked only under the direction of the physician on the case. In order that she might carry out the wishes of the medical profession at all times, the Medical Society approved "standing orders" which governed her conduct in visiting the sick and maternity cases before a doctor had been called.

The policy of the demonstration and health department was to offer their services freely to both white and colored persons. They did not attempt to handle the health problems of the white and colored groups in exactly the same way,

for it was recognized that the limited resources and capacities of many of the Negroes imposed certain limits on a practicable program. Thus milk drinking could not be so firmly stressed in colored schools as in the white, for most of the colored families could not afford it. But essential services were organized for white and colored children alike. A small minority of the white community indicated its dissatisfaction with the amount of service which white nurses gave colored patients, but prevailing opinion apparently supported the demonstration policy.

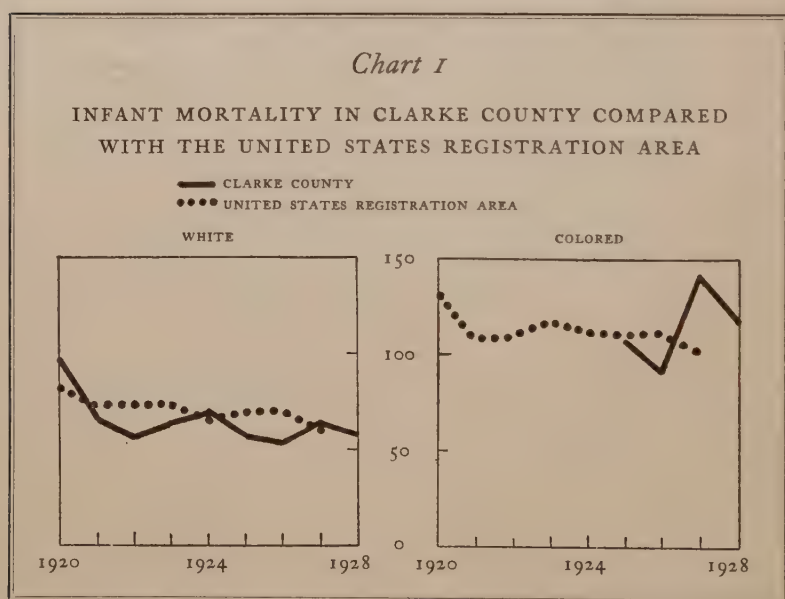
Through the organization of a local demonstration committee, through the membership of the demonstration director and pediatrician in the Medical Society, of the former on the board of the county hospital and Tuberculosis Association and of nurses and school workers in the parent-teacher associations, through a nursing committee, through constant consultation with the health officer and frequent conference with individual physicians and dentists, and through a wide variety of organized and informal contacts between members of the staff and their neighbors, the workers of the demonstration sought to acquaint themselves with the wishes of the community, to interpret their work, and to consolidate public opinion in favor of health progress. Each step in the development of the new health services which the demonstration sponsored was considered and approved by the appropriate local authority before it was taken. The consistent policy of the demonstration was to link all available community agencies in a cooperative campaign for child health.

CHAPTER III

WHAT WAS DONE FOR THE COMMUNITY

Between 1924 and 1928, an adequate nursing service—the first Clarke County had known—better communicable disease control, tuberculosis service, and out-patient service at the hospital contributed materially to the public health resources of the county. Comparative statistics of children's deaths show an apparent saving of 124 lives during the demonstration years.

THE purpose of the demonstration in Clarke County was to show the way to better health for Clarke County children. Before going into the details of the services which were established or developed for this purpose, it is fair to ask whether the whole operation did or did not make a measurable change in the health of Clarke County children. At the beginning of the work, the Child Health Demonstration Committee looked ahead and faced the fact that in the space of five years it would probably be impossible to bring about important changes in death rates for a community of only 24,000, where chance variations from year to year would affect the rates out of all proportion to their significance and where the lack of complete reporting in earlier years prevented the study of long-term trends.



In the main, this forecast has been justified. Among white infants the annual mortality rates for the four years 1920-1923, before the demonstration, averaged 70; the corresponding rates for the five demonstration years averaged 61. But the wide fluctuations in the rates from year to year (*Chart 1*) and the inadequacy of birth and death reporting in the rural parts of the county during the earlier years make comparisons dubious. The reporting of colored births and deaths both in Athens and in the rural districts was so poor during the years before the demonstration that colored infant mortality rates have little value for comparative study.

Total death rates show little change. But there is a clear-cut gain for the county when the deaths of all children up to fifteen years of age are studied. Even though reporting was incomplete, the deaths of 372 children were recorded during the four years 1920-1923—an average of 93 each year. During the five years 1924-1928 the deaths of 341 children were recorded—an average of 68 each year. The net saving is 124 lives.

The table below shows that this saving affected both white and colored children and both children under five and children between five and fifteen.

No one can prove that the 124 children who might have been expected to die between 1924 and 1928, and did not, were saved because more and better health work for children was going on during those years. It is dangerous to draw hasty conclusions from such figures. But the difference between the two periods is too great to be merely accidental. The number of deaths per year in each period is close to the average number. The summarized tabulation of causes of deaths, above, points significantly to reductions in deaths from conditions especially subject to influence through

¹ Details will be found in Table 2, page 152.

DEATHS OF CHILDREN UNDER FIFTEEN YEARS OF AGE
1920-1923 AND 1924-1928

	TOTAL		WHITE		COLORED	
	1920- 1923	1924- 1928	1920- 1923	1924- 1928	1920- 1923	1924- 1928
<i>Average number of deaths per year by age group: Total</i>	93.0	68.2	42.3	26.2	50.7	42.0
Under 5 years of age . .	72.5	57.8	35.0	22.8	37.5	35.0
5 years of age and under 15	20.5	10.4	7.3	3.4	13.2	7.0
<i>Average number of deaths per year by cause: Total</i> . . .	93.0	68.2	42.3	26.2	50.7	42.0
Communicable diseases . .	12.8	6.2	4.8	2.0	8.0	4.2
Tuberculosis	1.8	2.0	0.0	0.4	1.8	1.6
Syphilis	1.4	2.0	0.2	0.2	1.2	1.8
Respiratory diseases . . .	17.2	10.2	5.3	2.4	11.9	7.8
Diarrhea and enteritis . .	8.8	8.6	5.0	4.2	3.8	4.4
External causes	7.0	5.4	2.5	1.8	4.5	3.6
Other	44.0	33.8	24.5	15.2	19.5	18.6

sound public health measures. The schools and health department centered much effort on keeping communicable diseases in check—and deaths from the epidemic diseases are cut in half. They sought to build up bodies capable of resisting colds and bronchitis and pneumonia—and there is a sharp reduction in deaths from respiratory diseases. Clarke County was certainly no more prosperous during the later years, and in fact went through a period of very hard times. It seems reasonable to assume that health work did play a part in the saving of these 124 children.

To measure health progress in terms of life and death only is, of course, a back-handed procedure. The purpose of health work is to keep people fit, to give them a chance to live more normally and happily—not merely to keep

them from dying. As will appear in the following chapters, health work in Clarke County was definitely planned to turn pale children into rosy ones, to put flesh on too "skinny" frames, to clear small brains for school tasks, to build up muscles that stood the gaff on the playground and in the chores. But these results cannot be measured. Some sketchy measurements are quoted in Chapter VII, where the effect of school health work is estimated: for instance, the percentage of children who were seriously below average weight steadily decreased. But what, after all, has "percentage deviation from average weight" to do with the real business of being a child?

If children did become healthier in Clarke County—and there is at least the statistical evidence of the mortality records to put beside the impression of a thousand families² that they did—their improvement must have been related to the general level of community health. Special work for children must be grounded in sound health work for the whole population. In Clarke County the demonstration invested the money and technical skill at its disposal in strengthening the entire public health program at strategic points. It would be hard to say where the demonstration began and the health department left off, in this enterprise, for the temporary workers put their resources at the command of the health department, and the health officer, in turn, was glad to use such help in developing his permanent program. Before describing particular pieces of work for children, therefore, it will be convenient to sketch the contributions of the demonstration to the general health activities which served Clarke County citizens without regard to age. A fuller account of these activities will be found in Dr. Walker's appraisal in Chapter VII.

² See page 68.

Family Nursing Service

Among these general activities, the most important addition to the health resources of the county during the demonstration period was undoubtedly the work of the five nurses and their supervisor. Before the demonstration the health department was like a motor-car with one cylinder: the health officer was at the wheel and he knew where he wanted to go, but he had to jerk along from job to job because he lacked the staff to apply a steady flow of power. The sanitary inspectors could handle that part of his job which related to the control of milk, water, food, sewers, and privies, and could do something about quarantine. But they could hardly show a mother how to feed her baby, or teach a millwife's daughter how to keep her mother comfortable when she was sick abed, or persuade a cotton farmer to buy glasses for his youngster; and quarantine is a nuisance when no one has time to explain it. There was a nurse for those tasks—but when the one nurse was talking glasses to the cotton farmer she had to forget the mother with the ailing baby: it was impossible for her to take care of all the people who needed help in a population of 24,000. The five nurses who set to work through the combined efforts of the county, the city, and the demonstration became hands and feet, eyes and ears, for the health officer: they spread his leadership over the whole county; they carried his orders in communicable disease cases and his teaching in all sorts of health problems into the homes, and saw to it that something happened there; they brought back word that something more needed to be done. And incidentally they made some thousands of people more competent in healthy living, more comfortable in sickness, more useful to the community.

Before the demonstration one nurse had a district of 24,000

people. During the demonstration each of the five nurses served about 5,000 people. In her district each nurse was a generalized worker, making calls for all public health purposes and giving each family, as she visited it, such care as the family needed—adults, babies, and children alike.³ Besides this home visiting, each nurse called at the schools in her district (every day at every school in the city, less often in the rural schools), helped in the examination of school children, and organized and attended the health centers for babies and young children.

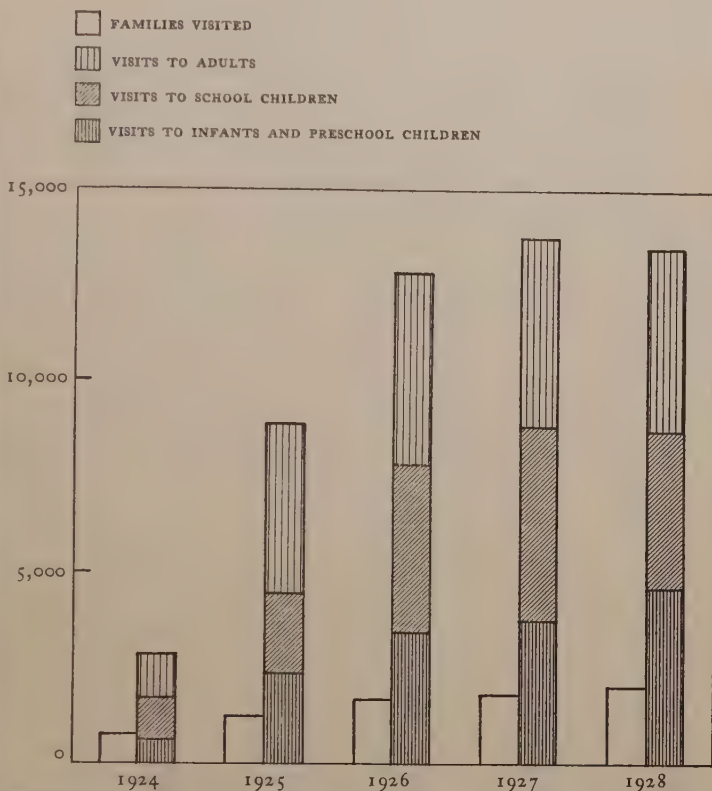
Perhaps the best way of giving a brief and clear picture of what these nurses did is to tell what the average nurse (a quite theoretical person, since she is defined by dividing the total number of nurses by five and a fraction) did in the course of an average year. She was employed 2,204 hours—counting in vacation and sick leave but counting out her hours off duty. She spent 671 hours of this time in the homes of her district: in 115 of these hours she called 352 times on 42 mothers for maternity instruction and care; in 113 hours she called 500 times on 135 infants and preschool children to help the mother keep them well by specific advice for specific problems, or to invite them to the health center, or to help in getting needed medical attention for them; in 118 hours she called 481 times on 165 school children to give similar health advice; in 199 more she called 589 times on 112 patients who were sick with some communicable disease, including tuberculosis, to show the best ways of avoiding cross-infection and of caring for the patient;

³ In 1924, 1925, and part of 1926, the Tuberculosis Association maintained its own nurse for tuberculosis work only. In parts of 1926 and 1927, the Tuberculosis Association employed a nurse who was part of the generalized staff, tuberculosis work being divided between all six staff nurses. During these years the nursing districts were of course somewhat smaller. In 1928 the Association applied its funds in other ways and five nurses again carried the total nursing load, including tuberculosis visiting. The Metropolitan Life Insurance Company nurse gave service to policyholders and their families throughout this period.

in 126 hours she called 350 times on 57 sick persons of all ages, to help their families give them the right sort of bedside care. She spent 120 hours in health centers, assisting the doctor, welcoming the mothers, weighing the children, and dropping a word of health advice in a waiting mother's ear. She spent 283 hours in school service, examining children whom the teacher singled out as showing signs of communicable disease, consulting with teachers, principals, and children about needed medical or dental work, giving first-aid for small hurts, arranging for medical examinations, and assisting the examining physician. She devoted 163 hours to educational and organization activities—health talks, committee meetings, staff conferences, and the like; 354 hours to office work, including the careful recording of her work in the field and conferences with the supervisor and with other staff workers so that consistent, well-planned service could be given; 374 hours to travel—usually by automobile—to schools and health centers and homes; and 239 hours to sick leave and vacation. She usually needed the vacation.

In tables which will be found in the Appendix⁴ the total figures for the whole nursing staff will be set forth in detail. Here it may be noted, in passing, that the nurses together made 13,492 visits in 1928, their last year of work as a complete staff, and that these visits took them into 2,082 different families—more than a third of all the families in the county. *Chart 2* shows how these visits were divided between adults, babies and young children, and school children. Visits were divided between white and colored individuals in about the ratio of population (46 per cent colored), though child health service, with 36 per cent of the visits made to colored children, showed more variation from this ratio than visits for maternity service, communicable disease control, and care of the sick.

⁴ Pages 157 and 158.

*Chart 2*FAMILIES VISITED AND NURSING VISITS BY AGE-GROUP
CLARKE COUNTY*The Hospitals*

The public health service developed at the Athens General Hospital must be reckoned as one of the most important additions during the demonstration to the public health resources of the county, though the demonstration itself was only indirectly responsible for the change. The poverty of the mill and colored groups created a difficult problem for the

doctors who were responsible for the cure of disease, preventive care, and the correction of children's defects. When systematic follow-up of the school and health center examinations was begun in 1924, the haphazard out-patient service provided at the Athens General Hospital was inadequate to handle the work which clamored for attention, and thirteen physicians on its staff united in setting up a more effective organization in which for the first time clinics were definitely scheduled and held with fair regularity. In the same year the voters approved a bond issue for the purchase of the hospital, which thus became a county institution. The reorganized staff assumed responsibility for carrying on the out-patient department, and at the same time the director of the demonstration became a member of its Board of Trustees. Later ten free beds for white children and ten for colored were set aside for the care of patients referred to the clinics for correction or other treatment, and it became possible to arrange for many tonsillectomies, for instance, which could hardly have been secured in any other way.

In 1926 Athens' first orthopedic clinic was held under the auspices of the Medical Society and the demonstration, and monthly clinic service with a visiting orthopedist in charge was established as a sequel. In 1927 the out-patient department was moved to more adequate quarters in the hospital, where surgical, medical, orthopedic, tuberculosis, venereal disease, obstetrical and gynecological, and children's clinics were housed. Admission to the out-patient service was regulated by the hospital board, with the secretary of the Red Cross investigating cases prior to their acceptance. The health department nurses brought cases to the clinic and followed them up, so far as possible, after discharge.

St. Mary's Hospital, which remains a private institution, was likewise cooperative in making it possible to secure treatment for indigent patients.

The Laboratory

The resources of the health department itself were notably strengthened by the development of its laboratory. The demonstration helped by temporarily paying the cost of a full-time laboratory technician who during 1924 replaced the part-time worker who had been in charge previously, and by supplying needed equipment. In 1927 the Commonwealth Fund provided the apparatus for making Kahn tests for syphilis: this enabled the health department to secure a prompt diagnosis instead of waiting for a Wassermann test by the state laboratory, and so stimulated the effort to control this disease. The development of laboratory service is reviewed by Dr. Walker on page 125.

Communicable Disease Control

With his hands strengthened by the nursing staff, the hospital clinics, and the enlarged laboratory service, the health officer was able to do a better job in controlling communicable diseases than had ever been done in Clarke County before.

When a generalized nursing staff began work in 1924, the health officer was able for the first time to reach back systematically into the schools—the nursery of childhood epidemics—and so to check some diseases at their appearance and to combine the administration of quarantine with personal instruction in the home.

During the demonstration years a nurse visited each city school every day. There she inspected all the children who were referred to her by the teacher (who had previously made her own morning inspection) as needing special care. The nurse had authority to exclude from school such children as showed signs of any communicable disease. When sore throat and a high temperature suggested the possibility of diphtheria, she routinely took a culture before

sending the child home, and forwarded it at once to the health department laboratory for examination. If there were other children in the family, and the indications were suspicious, she rounded them up from their various classrooms and excluded them also.

As soon as possible after excluding a child, the nurse called at his home and urged the mother to secure medical care, if she had not already done so. If the family refused to call a doctor and the nurse thought the disease might be communicable, she reported the matter to the health officer, who then visited the home himself to make a diagnosis. As soon as a diagnosis of communicable disease was made by the family physician or health officer, or by the laboratory, the nurse⁵ quarantined the home and showed the mother or some other responsible adult the best methods of isolation and care of the patient. The next morning, on her return to school, she consulted the teachers, found the children most intimately exposed to the members of the infected family, and warned her to watch them with particular care.

During the course of the illness the nurse made such visits as were needed for further instruction and care, under the direction of the physician in charge. When the normal period of isolation was over, she consulted the health officer, visited the home, released the family from quarantine if conditions were satisfactory, and supervised the final disinfection.

At the close of the demonstration the nurses were making nearly 900 visits a year for the control of epidemic diseases.⁶ Nursing service was, to be sure, only one factor in the campaign against communicable disease, in which the demon-

⁵ Quarantine was enforced by the sanitary inspectors during the earlier years of the demonstration.

⁶ See Table 9, page 158, for a complete tabulation.

stration supported the efforts of the health department at many points. Steady progress was made in the campaign as a whole, which is reviewed in Dr. Walker's appraisal (Chapter VII, page 107).

Tuberculosis

The balanced program of health promotion which was developed in Clarke County provided a broad base for the control of tuberculosis. The formation of good health habits among school children, the regular examination of school children by a physician, the fairly continuous observation of health in the classroom, the prompt discovery of communicable diseases and the steps taken to guard against sequelae which might weaken the child's resistance to infection, all tended to create a state of things in which the average level of health was raised and so to protect the community against the ravages of a particular disease.

The demonstration did, however, play a part also in the specialized campaign against tuberculosis.⁷ In 1924 it helped to arrange the case-finding study which laid the foundation for an expanded program. In 1924, 1925, and part of 1926 the nurses cooperated closely with the special tuberculosis nurse, and in 1926 and thereafter the generalized nursing staff included all forms of tuberculosis nursing in their regular program. In 1927 the demonstration director of nursing and the health educator joined in guiding a community campaign, sponsored by the Tuberculosis Association, for preventive service to children who were persistently underweight.

In caring for families in which tuberculosis occurred, the nurses kept their eyes on both parents and children. They gave bedside care where this was needed for active cases, and taught the other members of the family how to protect

⁷ Described by Dr. Walker on page 115.

themselves from infection. Those exposed to the disease were urged to secure examinations at the clinic. In cases where it was possible to provide reasonably satisfactory care outdoors at home, the nurses helped to plan and carry out the necessary arrangements. Much effort was needed to persuade patients who would not be well cared for at home to accept the advantages of sanatorium care, and to persuade their families to keep their hands off until the patient had stayed long enough at the sanatorium to benefit by it. After special clinics held in one of the cotton mills in 1927, a nurse made regular visits to the mill to check the temperature, weight, diet, and health habits of the employees who were in need of special attention.

At the end of the demonstration the five nurses were making approximately 2,000 visits a year for tuberculosis control. About one-third of the individuals cared for were white; this ratio does not accurately reflect the greater need of colored patients, but the reporting of cases, scanty enough among the white population, was so much worse among the Negroes that the nurses and the health department were gravely handicapped. At no time during the demonstration, indeed, was the disease reported early enough to make adequate public health service possible. Most of the cases known to the health department and brought under public health care were discovered by the nurses and then diagnosed by the clinic and health department laboratory. Almost half the individuals visited in 1928 were contacts, two-fifths were active cases, and the rest suspected cases.

Care of the Sick

The most important job of the nurses was to teach health—to teach mothers how to keep themselves and their children well, to teach families unfortunate enough to have a case of communicable disease how to keep the infection from



DAILY WATCHFULNESS IN THE SCHOOLS WAS THE
FIRST LINE OF DEFENSE AGAINST DIPHTHERIA AND
OTHER EPIDEMIC DISEASES



THE NURSES GAVE AS MUCH TIME TO THE CARE
OF THE SICK AS THEY COULD, BUT STRESSED
PREVENTIVE SERVICE

spreading, to help mothers carry out, for their children, the advice given by health department and private physicians. But they were helping families at the points where families most needed help, and they found time for a certain amount of care (averaging about 11 per cent of their total time in the field) for the sick of all ages, even when the sickness was not a communicable one. Here the teaching function was uppermost, for the nurse could not go into the home as a private duty nurse would do and settle down to long-continued bedside care; rather she must show some other member of the patient's family—often an older child, or a grandmother, when the mother was in service or worked in the mill—how to keep the sick person comfortable and to carry out the doctor's orders. But the poverty of many families and their limited teachability made no small demand on the nurse's time, and teaching and direct service were necessarily blended together. In the face of ignorance and want, such care often meant the difference between a minimum of comfort and security for the sick and none at all. It was useful too as a means of opening the way for more constructive health teaching, for the indifferent and suspicious family—there were many such among both the mill workers and the colored people—often welcomed the obvious help which the nurse could bring in sickness and so came to accept the nurse herself as an adviser. Such care was, of course, given only with the approval and under the direction of a physician.

Hard as it was to change for the better the squalid living conditions of the mill worker, nurses found an instance here and there in which the care of the sick, once taught, was genuinely appreciated and passed on to a neighbor. For example, following a clue given by a neighbor, one of the nurses found a serious case of pneumonia in a mill family. Though not very receptive to suggestions, the family allowed

the nurse to bathe the patient, open the window, and establish such order as she could in the sickroom. The obvious increase in the sick child's comfort made its own impression, and when the nurse was called a few weeks later to a nearby house to face a similar crisis she found that the neighbors who had seen her at work had already arranged proper ventilation, fastened a sputum bag to the bed, and had the patient as clean as possible.

In this work the nurses came into contact with pretty much every variety of ill that flesh is heir to, as the following table indicates:

NURSING CARE OF THE SICK, 1925-1928

	NUMBER OF VISITS	NUMBER OF CASES	AVERAGE NUMBER OF VISITS PER CASE PER YEAR
Pneumonia and other respiratory diseases	722	111	6.5
Cancer, diabetes, nephritis	521	26	20.0
Apoplexy and paralysis	97	13	7.5
Diseases of circulatory system	315	35	9.0
Diseases of skin, eyes, ears	456	52	8.8
Diseases and disorders of digestive system	262	43	6.1
Diseases of genito-urinary system . . .	660	63	10.5
Accidents and other external causes . .	565	32	17.7
Other causes	903	91	9.9

At the end of the demonstration the nurses were making approximately 1,800 visits a year for such purposes, about two-thirds of them to adults. In these visits about 350 different individuals were cared for.

In many ways, it is clear, the Clarke County community had better health service because of innovations or improvements sponsored by the demonstration. A nursing staff reinforced the effort of the health officer to keep his community healthy, gave special attention to checking the spread of the communicable diseases, including tuberculosis, and

gave much care to the sick of all ages whatever their ailment. The county hospital, in response to the need revealed by the demonstration workers, developed a useful out-patient service. The health officer was helped to make his laboratory an effective tool of communicable disease control. The general improvement in health service, together with the special activities described in the following pages, was reflected in a sharp reduction of deaths among children.

CHAPTER IV

WHAT WAS DONE FOR SCHOOL CHILDREN

Twelve thousand medical examinations, 10,000 dental examinations, and 17,000 nursing visits were made to guard the health of school children. They led to 2,000 dental treatments, 3,000 oral hygiene treatments, and 600 corrections of other physical handicaps. In 1,000 families the parents reported children's health bettered as the result of systematic health teaching in the schools.

IN Athens the sing-song chant of mill children learning their spelling lesson in the good old-fashioned way comes from the open windows of an old school building on a shabby street—a building with its cramped “boys’ playground” and “girls’ playground” rigidly fenced off from each other. On the fringes of the city stands a rambling modern building where the children of college professors, doctors, bankers, and the like learn their lessons in a cheerful setting and play together on ample grounds. Off a main highway stands the best school building in the county—the only one, for instance, with adjustable seats: it is a new consolidated county school. Not far from it is a tall, shaky barn of a building which for years has sheltered colored school children.

These contrasts make it difficult to generalize about the schools of Athens and Clarke County during the demonstration.¹ Some were used almost entirely by the children from mill homes, some had very few of them, some had a mixed attendance. The social cleavage between the mill and town groups was minimized so far as possible by the teachers, but the mill children almost universally left school at fourteen. Even while they were under the legal working age, they drifted about so much and came to school with such handicaps that they were very generally retarded. The teachers were for the most part natives of Athens who held their positions for many years with little change. Be-

¹ Athens had in 1928 one high school, one departmental school (sixth and seventh grades), and four elementary schools for white children and a duplicate system for colored children. There were also a private junior college for girls, two practice schools maintained by the Georgia State Teachers College, and two private schools for Negroes. The county had a white high school used as a practice center for students from the Agricultural College, a consolidated white school, and seven one and two-room elementary schools for white children, with twelve elementary schools and a private teacher-training and industrial school for Negroes. The city and county boards of education are separate.

fore the demonstration introduced health education the superintendent had no special supervisory staff, and only two of the principals were free of teaching duties. A vigorous group of parent-teacher associations among the white schools and intelligent leadership among the Negroes helped the schools to make the best of meager resources.

Demonstration Objectives

Athens had already recognized, before the demonstration began, the opportunity offered by the public schools to better the health of its coming citizens. The county health officer had made medical examinations and had begun immunizing school children against smallpox and typhoid fever; school nursing had been done at times in city and county; children in the white city schools were weighed monthly and measured semi-annually by their teachers; nutrition classes for underweight children had been conducted in two public schools by workers from the State College of Agriculture; formal gymnastics and some folk-dancing were taught; the state law requiring two thirty-minute periods of hygiene each week was observed; but only here and there was health behavior taught as a part of living and not merely as a textbook assignment. The colored schools and the rural schools, both white and colored, had been left to their own devices.

The tasks which the demonstration workers set themselves, in conference with the health officer and the school authorities, were three:

1. To develop the rapid and isolated medical examination into a coordinated plan of health supervision in which the examining physician, the nurses, the oral hygienist, the teachers, and the parents would share, and to create a healthier environment in the school buildings.
2. To set up a routine, by team-work between the health

officer, the nurses, and the teachers, which would tend to protect children from the spread of communicable disease in the schools.

3. To build up the formal teaching of hygiene and gymnastics into a vital experience through which each child would form good health habits and would develop wholesome attitudes toward health and physical proficiency.

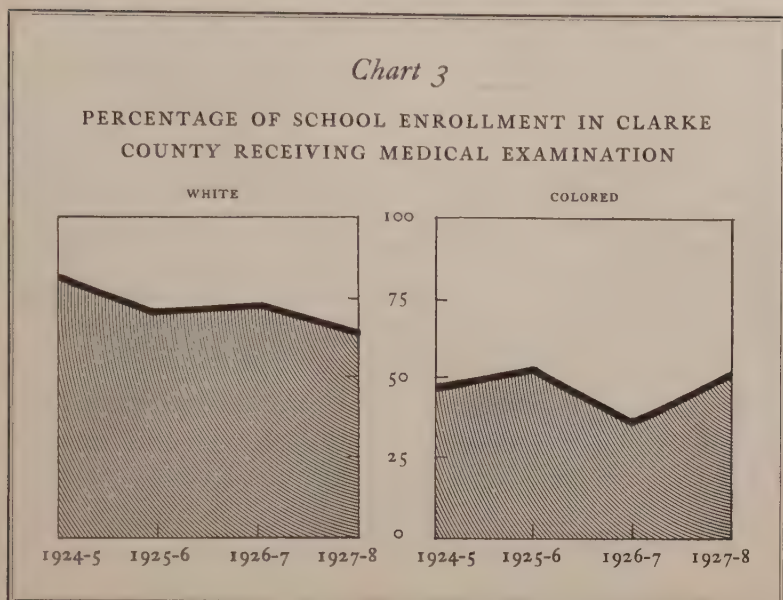
These objectives fitted together, and the many workers who contributed to them were so conscious of the plan as a whole that it is difficult to separate their functions clearly. However, it will be convenient to break the description of them into three sections, as follows:

1. Medical and nursing services for health supervision and protection against disease.
2. Dental health, which was to some extent a special project.
3. Classroom and playground activities directed toward the formation of health habits and attitudes.

MEDICAL AND NURSING SERVICES

In the fall of 1924 the health officer and the demonstration pediatrician began the annual examination of school children on a somewhat new basis. The health officer working alone in 1923 had been compelled to give a very rapid examination, averaging fifteen children to the hour. Follow-up work was necessarily limited. The new type of examination was more leisurely; a determined effort was made to secure the presence of parents; and a staff of five nurses was available for more systematic work in the homes. Both white and colored children were examined.

The health officer and the demonstration pediatrician continued to share the task of school examinations throughout the five years. In 1924-1925 examinations were offered to all children not examined in the previous spring; in 1925-1926 and subsequent years examinations were made



routinely in the first, third, and fifth grades.² In the rural schools an attempt to examine all children annually gave place to the permanent plan of reaching every child every other year. In 1927-1928, by vote of the Board of Education, physical examinations were for the first time required of high school pupils on the athletic teams or in the R.O.T.C., and the principal encouraged them for all students. *Chart 3* shows the total number of examinations each year in relation to total enrollment, in the public elementary and departmental schools.

Parents and the Examination

Teacher and nurse worked out together the schedule for examinations. The principal sent a written invitation to each parent to attend the examination, and the nurse added

² With additional examinations for children newly enrolled, for those with special health problems, and for children in the sixth and seventh grades at the principal's request.

her own invitation wherever she could in her home visiting. The examination of a child whose mother sat beside him was more leisurely than that of the unaccompanied child—and much more useful. If no adult from the child's family was present, a rapid inspection was made and the findings noted for reference to the mother and for follow-up by the nurse and teacher. If the mother was at hand, a much longer time was spent in what was practically a health audit of the child. It was possible then to learn from the mother the essentials of the child's health history, to inquire into the conditions which were reflected in malnutrition and faulty posture, to advise sound regimes for constipated children, to put the mother on guard as to digestive disturbances, to advise her to consult a physician about a suspicious abdominal symptom, to overcome her prejudices against vaccination or toxin-antitoxin, or to stress the danger of chewing or smoking tobacco or dipping snuff—not unknown in youngsters from the mill group. Opportunities for such health teaching made the examining physicians regard the school examination with the mother present as the most valuable single element in the entire health program for children.

In the white city schools, 41 per cent of the examinations in 1927-1928 were made with a parent present, but the attendance ran well above the average in the schools attended largely by children of professional men and women. In the white rural schools, the longer distances and the uncertain interest of tenant farmer families kept parents' attendance down; it was 18 per cent in 1927-1928. The favorable showing of the rural colored schools, where 66 per cent of the children examined had a parent present in 1927-1928, is due to the fact that the health officer visited the colored churches a Sunday or two before he went to the schools, explained the value of the opportunity for conference with

the examining physician, and exhorted all the parents present to take full advantage of it.

Examination Procedure

Before beginning his examination, the physician referred to the child's individual health record, with medical and nursing data, on which the teacher had also entered the result of her own tests of the child's vision and hearing and the record of his latest weighing with the percentage deviation from standard weight. The summary health record kept by the teacher,³ with its series of weight reports, was also available if he wished it. The vision and hearing test, given at the beginning of the school year, were of immediate value to the teacher in seating the class, and served also to screen out for the physician the children who needed more careful attention to eyes or ears.

At the examination the child presented himself stripped to the waist, with a cape around the shoulders, and with shoes off. The examiner took note of eyes and ears when indicated, and routinely of skin, mouth, throat, chest, abdomen, orthopedic condition, and posture. A nutrition rating was given on the basis of subcutaneous fat and tissue, color, muscle tone, and posture. As dental examinations were made routinely by the oral hygienist, no special emphasis was laid on the teeth, though marked deficiencies were called to the parent's attention. At each point where a condition needing correction was found the physician discussed the matter with the mother, explaining the reason for the suggested visit to the oculist or the doctor or the dentist and its bearing on the child's general health.

The incidence of physical handicaps which were considered sufficiently serious to be referred to a physician or dentist for treatment is shown in the accompanying table.

³ Reproduced on page 61.

INCIDENCE OF DEFECTS AMONG 5,890 WHITE AND 3,470
COLORED SCHOOL CHILDREN EXAMINED IN
CLARKE COUNTY, 1925-1928

(Ratings of Moderate and Severe)

	NUMBER OF CHILDREN SHOWING DEFECT		INCIDENCE PER 100 CHILDREN EXAMINED	
	White	Colored	White	Colored
Underweight (10% or more) . . .	1,272	528	21.6	15.2
Vision	338	103	5.7	3.0
Hearing	16	19	1.0	0.5
Skin	87	43	5.5	1.2
Eyes	363	138	6.2	4.0
Ears	132	55	2.2	1.6
Teeth ⁴	2,156	948	36.6	27.3
Oral hygiene ⁴	1,410	909	23.9	26.2
Nose and nasopharynx	362	180	6.1	5.2
Tonsils	945	548	16.0	15.8
Heart	37	24	0.6	0.7
Lungs	25	18	0.4	0.5
Thyroid	10	8	0.2	0.2
Orthopedic	176	57	3.0	1.6
Nutrition	1,030	699	17.5	20.1

⁴ Includes ratings only for children examined by physician.

There was a marked difference between children from the privileged group and those from the mills, the latter, in the opinion of the examining physicians,⁵ showing almost uniformly inferior nutrition, teeth, and posture. Few significant variations were found between white and colored children, although it is interesting to note that the proportion of underweights according to the Baldwin-Wood tables, and the incidence of dental defects, were greater among the white school children.

⁵ No attempt was made in the school examinations to record the occupational data which would have been necessary for a statistical comparison of the two groups.

After the Examination

While the examination was in progress the nurse noted the findings on the medical record. When it was finished she gave to the mother (or sent home with the child) a slip showing the conditions needing attention or reporting the child's freedom from defect. The record then became the point of departure for what was often a persistent and long-continued campaign by the nurse and teacher to secure the correction of menacing handicaps.

Usually after the examinations at one school were completed, the medical examiner and the nurse met the teachers in conference as a group and discussed the defects found and their relation to the children's school work. Various means were used to keep the record of the examinations before the teachers for ready reference. The plan finally adopted was to file the medical records in the principal's office in each school, where they could conveniently be kept up to date by the nurses and consulted by the teachers. Conferences with former teachers about the problems of a particular child, frequent talks with the nurses, and the annual contact with the school physician strengthened the teachers' work in following up the examinations.

Generally speaking, the teacher was able to secure adequate results when she was dealing with children from good homes, while the nurse came more directly into play when the family was so poor or so unresponsive that action involved difficult adjustments. In several cases, however, the teachers took the initiative through the parent-teacher associations in establishing loan funds which were used in rotation for the correction of various defects, parents paying back the cost as they were able, or in financing such work by direct contributions. One parent-teacher group made up mostly of mill-workers' families raised no less than \$344 for this

purpose in one school year, spending the greater part of the fund for glasses and dental work for the children. The parent-teacher organizations were useful also in less conspicuous ways, since their regular meetings afforded the teacher and nurse together an excellent opportunity to talk with parents about the needs of their children.

The nurse went further. She carried into the home the message which reinforced the daily health teaching of the classroom and the physician's advice at the time of examination. By far the greater part of all nursing visits to children of school age⁶ contributed in some way to health supervision—either by clearing up in the mother's mind some perplexity about the child's food or behavior, or by counteracting a traditional prejudice, or by explaining a recommendation of the doctor's, or by working out ways and means to secure needed care when money was scanty, or by actually transporting children to the doctor or the hospital clinic when distance or inertia stood in the way.

In the school building the nurse was at once the field agent of the health officer and the technical adviser of the teachers in health problems. During the demonstration, a nurse visited each public school in the city, white and colored, every morning. Regular but less frequent visits were scheduled in the rural schools. In the city schools a room was set aside for the nurse's use as an office: to this room came children with minor injuries which needed first-aid, children who had been sifted out by the teachers' morning inspection as possibly ill, and children who had some message for the nurse from home or a neighbor. The bearing of this daily service on the control of communicable diseases has already been discussed.⁷ The nurse was intimately connected with the health procedures of the classroom.

⁶ For a tabulation of visits for this and other purposes, see Table 9, page 158.

⁷ Page 23.

She coached new teachers in the best ways of making the daily inspection; she added her technical judgment to that of the teacher in excluding children who ought not to be at school; she stood ready for a word of conference over this child and that; she was on hand to hear and to act upon the rumors and reports of sickness that naturally drifted into the schoolroom. The daily nursing visit to the school was considered by Athens principals and teachers an invaluable addition to their health resources.

DENTAL SERVICES

In Athens a little girl of nine, visibly terrified, made her first visit to a dentist in the care of a school principal. She sat stoically through nine fillings, stepped down from the chair, and grunted "Huh! Is that all you do? I thought you took 'em out and filled 'em and put 'em back in again." What led Athens children during the demonstration to face the perils, known and unknown, of what is glibly called "reparative service"?

The answer is to be found in what appeared to be a genuine community conviction that children's teeth were worth caring for—an attitude which grew out of the devotion of their teachers, the generous enthusiasm of the dentists, and a simple plan that worked more smoothly and productively, perhaps, than any other part of the local public health service.

Public interest in the care of children's teeth in Athens was already apparent before the demonstration. In the year before the new program was launched the county nurse and the dentists of Athens had gotten together, the city council had bought a portable chair, and some free clinical service had been begun at the court house and later at the Athens General Hospital. The Red Cross and

the Tuberculosis Association referred children for treatment when they found a need.

This was, however, an occasional service, though it laid the foundation for community understanding of the problem. When the demonstration began work in 1924, an oral hygienist was employed to develop a more systematic and constructive program. With the beginning of the school term in the fall of that year, she began a campaign:

1. To examine the teeth and chart the mouth of every child in the Athens elementary schools;
2. To arouse in the children an active interest in the care of their teeth;
3. To secure the cooperation of the parents in correction of dental defects;
4. To teach children the relation of diet to building strong teeth and to secure their active interest in keeping them; and
5. To establish a friendly cooperation between the dentists of Athens, the Board of Education, and the demonstration.

Details of the program were worked out by slow experiment. At first dental examinations were combined with the medical examinations, but this wasted time and the oral hygienist was eventually left free to work out an independent schedule with the schools. She began by examining teeth without cleaning them; then the dentists, to save their own time, asked her to clean teeth when that was needed whether the child could afford to pay for treatment or not. This gave her a better chance for a long talk with the child about what he could do for his own teeth and so stimulated the general practice of good dental habits. After various arrangements had been tried for getting the child to the dentist for treatment, the teachers began to make appointments directly with the dentists for individual children, nurses and the oral hygienist helping as they were needed in taking the child to the dentist's office. Often children were excused from school for this purpose. The



THE NURSES' REGULAR VISITS TO THE SCHOOLS
IN ATHENS GAVE OPPORTUNITY FOR FIRST-AID
AS WELL AS FOR THE PROTECTION OF CHILDREN
AGAINST DISEASE



IN FOUR SCHOOL YEARS MORE THAN 10,000 MEDICAL
EXAMINATIONS OF SCHOOL CHILDREN HELPED TO
SAFEGUARD THEIR HEALTH. THEY WERE MOST
EFFECTIVE WHEN THE MOTHER WAS ALSO PRESENT

dentists cooperated with unfailing cordiality, and children began to show pride in the results of systematic care.

In the spring of 1926 the district Dental Society asked the demonstration to cooperate in planning its annual meeting to be held in Athens. Dr. H. DeWitt Cross, director of the Forsyth Dental Infirmary of Boston, and Willis A. Sutton, superintendent of schools in Atlanta, who were secured as speakers, also addressed a public meeting under the auspices of the Parent-Teacher Association. Dr. Cross and Mr. Sutton interested a large number of parents in the possibilities of preventive work. Mr. Sutton's report that the school system of Atlanta had arranged a holiday for classes which secured "100 per cent" correction of dental defects was heard with interest, and when the Athens schools reopened in the fall the Board of Education readily made a similar offer.

The Parent-Teacher Association of the Oconee Street School, attended almost entirely by children from the mill population, had been giving serious attention to the problem of financing the correction of defects. Shortly after the end of school the association held a barbecue and set aside the proceeds as a revolving loan fund to pay for doctors' and dentists' services in correcting defects found in the school examinations, parents agreeing to pay back the cost in small installments as—and if—they were able to do so. With this added resource the teachers systematically went to work. By December 21 each child found in need of dental care had visited a dentist and secured a certificate that the needed work had been done, and the whole school won its holiday. In the course of the school year the three other white elementary schools, the white intermediate school, and the normal practice school had made a similar record, and a large percentage of children in the colored schools also reported corrections.

ATHENS BOARD OF EDUCATION

Mr. _____
_____ teeth are in need
of dental attention. The schools are mak-
ing an effort to have every child's teeth
put into good condition. Will you please
co-operate with us in this work by taking
your child to the dentist at the earliest
opportunity.

_____ Oral Hygienist.

G. G. Bond, Supt.

Date _____ 19 _____

(Over)

The machinery of the campaign was simple. Upon being examined by the oral hygienist the child was given a report card for his parent. This card went with the child to the dentist, was signed by him when the needed work was finished, and came back with the child to the schoolroom, where it was posted as an encouragement to other children. There were, of course, a limited number of cases in which the judgment of the oral hygienist and of the family dentist differed, or in which certificates were signed without any visible evidence that defects had actually been corrected. In the great majority of cases, however, the dentists were as interested in the campaign as the teachers and children, and the certificate was an accurate report that for the moment the child's teeth were in as good condition as dentistry could make them. The correction of malocclusion was encouraged, but its lack did not bar the child from qualifying for the promised holiday, since corrections of this type often took too long to be favorably affected by such a campaign.

HAVE THIS CARD SIGNED BY YOUR DENTIST
AND RETURN IT TO YOUR TEACHER

This is to certify that _____
of _____ Grade _____ School has been to
my office for the following services:

Examination _____ Fillings _____

Prophylaxis _____ Extractions _____

This is all the dental work necessary at
this time.

D. D. S.

Date _____ 19 _____

Developed for use of schools in Athens and Clarke Co., Ga.

In the Rural Schools

Meanwhile, another forward step had been taken. No intensive work had been done to promote dental health in the rural schools, though in previous years the dentists had given some volunteer service in the way of occasional examinations. The health officer turned to this problem in the fall of 1926, and arranged with Athens dentists to make an inspection of the teeth of all rural school children. A letter was prepared urging parents to secure the correction of the defects which were found, and the city dentists established special rates for doing this work—the white dentists agreeing to fill teeth at one dollar per cavity and the colored dentists at fifty cents. The nurse aided in impressing the importance of this work on the families she visited, and the teacher assumed responsibility for collecting the fees, which were stated clearly in the notice which was sent home, scheduling appointments, and getting the children into town, using a neighbor's car or the school bus for the purpose. The dentist who examined a school kept

a duplicate record of the defects needing correction and of the price which was set for doing the work, and the city dentists accepted patients interchangeably on this basis.

The Program Established

In the school year 1927-1928 both city and county programs continued in much the same fashion, with mounting interest. At the beginning of the term the Board of Education assumed, for the time being, the full salary of the oral hygienist and provided for the transportation of her chair and equipment from school to school. Two of the local dentists appeared before the Board, on their own initiative, to urge this action.

For corrective work, the dentists continued their cooperation, giving care free or at reduced rates on the principal's recommendation. The "100 per cent" campaign started automatically with the opening of school and even before it; many of the children with dental work to be done had taken themselves voluntarily to the dentist before the oral hygienist reached them. The fact that some schools which had secured "100 per cent" correction in the previous spring again showed a high incidence of defects was frankly accepted as a normal indication that the campaign must be continuous and must stress the regularity of visits to the dentist rather than the single correction.⁸ Before the end of the year all the white elementary schools, the white intermediate school, the normal practice school, and the colored elementary and intermediate schools (in which corrections in permanent teeth only were counted) had collected their full quota of certificates that the dental treatment then needed had been done.

While emphasis has been laid on the work of the oral hygienist and the dentists, the complete program for dental

⁸ See page 70 for records of correction.



THE ORAL HYGIENIST DEMONSTRATING A GOOD
METHOD OF BRUSHING THE TEETH. TOOTHBRUSH
DRILLS WERE NOT HELD, BUT ORAL HYGIENE
WAS TAUGHT FROM MANY ANGLES



WHEN NEEDED DENTAL WORK HAD BEEN DONE,
THE DENTISTS' CERTIFICATES WERE PINNED ON
THE WALL AS INDIVIDUAL TROPHIES AND A RECORD
OF CLASS ACHIEVEMENT

health brought into play other members of the health staff. It may be summarized as follows:

1. Nursing service to expectant mothers, in which proper diet and needed dental care were advised.
2. Health supervision through the health centers and nursing visits for babies and preschool children, with emphasis on diet.
3. Health teaching in the classroom, in which the right choice of foods, daily care of the teeth, and the value of regular recourse to the dentist were stressed among other health habits. The oral hygienist reinforced the teacher by providing scientific and popular teaching material and by occasional classroom visits for direct teaching and demonstration. Teaching in the poorer schools adapted itself to the living conditions which prevailed: where a toothbrush and toothpaste would have been unattainable luxuries, a twig and salt and water were called into service.
4. An annual examination (with prophylaxis in many cases) by the oral hygienist of the teeth of all children, white and colored, in the public schools, from kindergarten through the seventh grade. The need for dental work was reported to the parent on a printed card. In the rural schools the examinations were made by dentists on a volunteer basis.
5. Follow-up by the teachers, with such help as they needed from nurses and the oral hygienist, to secure corrections among those able to pay for service. Free or part-pay service was provided in cases where the usual fees were prohibitive. Arrangements for such service were made by teachers and principals in cooperation with the dentists.
6. Returning the dental certificates to the classroom where, in the city schools, they were tallied in an annual contest for a special holiday.

The oral hygienist, after she was employed by the city Board of Education, was not available routinely for preschool service, or during the vacation period. It was, therefore, impossible to incorporate into the program as much attention to preschool children as would have been desirable. The health center physician and the nurses were able, however, to teach dental health for these younger children, and the routine of examinations and follow-up in the lower

grades covered the important period when the permanent teeth were coming in.

The dental program in Athens received wide recognition. In 1927 the Georgia State Dental Society awarded a certificate of appreciation to the city of Athens for its "distinguished service" in the cause of dental health and went on record unanimously as favoring the establishment of a division of dental hygiene in the State Department of Health. In 1928 an oral hygienist was appointed to the staff of this department to work out a state program. At the annual meeting of the American Dental Association in 1928, Dr. H. J. Burkhart of the Rochester Dental Dispensary called attention publicly to the success of the project.

An article on the Athens program in a national health magazine came to the attention of parent-teacher workers in the neighboring county of Madison, in which there were no dentists. Through the cooperation of the state oral hygienist and several Athens dentists, who volunteered their services, all the elementary school children of this county were examined in the fall of 1928, and it was planned to bring those needing care in to Athens in school buses. Several schools in two other adjoining counties, Oconee and Oglethorpe, were likewise examined by Athens dentists in response to local requests, and there was every indication that the interest in dental health which had reached so high a pitch in Clarke County would radiate, by direct contact, over a considerable part of northeastern Georgia.

CLASSROOM AND PLAYGROUND

Health education and physical education were linked together in the demonstration, with a physical educator as assistant to the health educator, because of a determination to see the child, and deal with him, as a *whole* child. Physical

education was thought of as the play side of health education, and the results of classroom health teaching were looked for not merely in good health habits at home, in freedom from physical handicaps, and in consistent gain in weight, but also in a keener desire for vigorous play, in greater skill and better teamwork in group games. Health education was not merely to prepare the child to be a better adult, but to show him how he could be a happier and more successful child.

The health educator, appointed to the demonstration staff in March, 1924, was promptly designated supervisor of health education in the Athens schools. Beginning in the following school year, the city Board of Education provided for a considerable part of her salary. Her first task was to study carefully the existing conditions in the schools and to make contact with the local agencies interested in the welfare of the school child. During the spring, with other demonstration workers, she visited the parent-teacher associations, the women's clubs, and the luncheon clubs, explaining the new program and asking support for it.

The interest in outdoor play aroused by a May Day festival, arranged under demonstration leadership, was quickly capitalized by the physical educator, who began work in June. A fund which had been accumulated by the Kiwanis Club over a period of several years was used to equip two playgrounds, one for white children and one for colored, and to provide play leaders who were recruited and trained by the physical educator. Mornings were devoted to the younger children, afternoons to the older ones. Both groups were weighed each week by a nurse. Physical examinations were given to nearly a hundred children at the colored playground. The playground for white children was near a large cotton mill but was on the "town" side of a traditional dividing line; the mill children stayed away

from it almost all summer. By the end of the season, however, it was freely used. After 1924 no funds were available for the operation of summer playgrounds, and the equipment was turned over to the schools.

Introducing the Program

The teaching of health behavior was for most of the Athens teachers a new and untried venture. To help them by the definite organization of teaching material the health educator drew up, during the summer of 1924, a tentative outline of health teaching. This was laid before the teachers at their institute just before school opened, as the first step in a process of teacher-training which continued throughout the demonstration. The supervisor met the teachers in group meetings, grade by grade, for the discussion of objectives, materials, and methods; the physical educator led classes in which the teachers learned games and dances; school meetings were held to discuss the particular problem of each neighborhood, with the nurse as well as the supervisor present; and general teachers' meetings were used to maintain interest, to encourage the doubters, and to put into free circulation the useful experiences and discoveries of each school group.

For the content of health teaching in the first year the supervisor relied chiefly on a series of bulletins in which the essential facts underlying the desired health habits were simply set forth. These bulletins were also published in the newspapers, so that the information they contained reached the home directly as well as via the classroom. Later a carefully selected health library was first loaned and then given to each school.

In the classroom emphasis was put first of all on personal cleanliness, milk drinking, and sufficient sleep, and other elements of the health habit program—based on the Child

Health Organization's "Rules of the Game"—were gradually introduced. The supervisor herself taught many lessons in the classroom as a demonstration of methods. The textbook periods already scheduled in the upper grades were not altered, but the new health teaching was given a strategic place in the first ten minutes of the day, and teachers were urged to watch for opportunities of adding a health reference here and there throughout the day which would deepen the impression made by the first period. So far as possible the teaching of health was slipped into gear with the established sequence of classroom interests—the harvest season, for instance, around which the children's work was already organized in the fall, was made the vehicle of teaching about the value of cereals and their use in the daily diet. There was at first some feeling among the teachers that health was a net addition to the teaching task and therefore burdensome, but they quickly found that it became natural and easy to keep health always in the foreground of the children's consciousness. By the end of the first year, as one teacher put it, they actually did not know when they were doing specific health teaching: it had become almost an automatic part of the daily life of the classroom and, indeed, added interest and significance to many other subjects.

The Daily Health Record

At the end of the first year's experimental work, in order to place the responsibility for health behavior as directly as possible on the individual child, a teachers' committee undertook to prepare a daily record of health performance for use in both white and colored schools above the second grade. This record, which was introduced at the beginning of the second demonstration year, varied little from the familiar content of such devices. The version which was

used in the final demonstration year contained the following items, with spaces to be checked day by day:

- I sleep long hours with windows open.
- I drink at least a pint of milk daily.
- I eat some fruit and vegetables every day.
- I eat leafy vegetables daily.
- I eat home-cooked cereals, corn bread, or whole wheat bread daily.
- I do not eat candy between meals.
- I take an all-over bath oftener than once a week.
- I try to wear clean clothes.
- I wash my hands before eating.
- I drink more than four glasses of water daily.
- I attend to bodily elimination daily.
- I use my own drinking cup.
- I brush my teeth at least once daily.
- I do not put my pencil or fingers in my mouth.
- I use no tea, coffee, or tobacco.
- I cover my coughs and sneezes.
- I play out-of-doors.
- I stand and sit as tall as I can.
- I drink milk at school.

There was also a space for the recording of absences due to the child's own illness.

No two communities are alike in health behavior, and Athens presented some special difficulties. The teachers believed that this code, necessarily a modest one at some points, was within the realm of possibility for most of the children of the city. Yet it did prove hard to get long hours of sleep in overcrowded mill houses and cabins. The pint of milk a day was all but impossible if sweet milk was required, but buttermilk was sometimes available even when sweet milk was not, and the teacher did her best to see that its deficiencies were supplied by other elements in the diet. Leafy vegetables were harder to get in the poorer white families than in the colored homes, for most of the latter had little garden patches which yielded at least turnip

greens and collards. Cereals had no place in the typical mill breakfast of coffee, hot bread, and molasses: the use of tobacco by young children was all too common. The "all-over" bath presented difficulties in houses where plumbing was either unknown or represented only by the backyard tap. Even the toothbrush was sometimes viewed with positive antagonism by parents whose attitude toward their children was summed up by saying "what was good enough for me is good enough for him."

True, these difficulties were characteristic chiefly of the fifth, or less, of the city population which was employed in the mills, and to some extent in the two-fifths which were colored. In the remaining two-fifths there were no such severe handicaps of poverty or ignorance, though as is usually the case health knowledge and good health practice were very unevenly distributed. Even where parents were fully aware of what their children ought to do—as many were—there was plenty of work for the schools in changing the attitudes of the children.

The first ten minutes of the day were set aside for marking the health records. While the children were busy at this the teacher made her morning inspection, noting cleanliness, neatness, and any deviation from the normal that suggested illness. As she went around the room she glanced also at the health records, looking for evidences of success which she could praise and for lapses which gave her an opportunity for a quiet word of reminder. No reward was offered for a clean record, no scolding or public reproof was given for a misstep. The teachers were warned not to promise definite health gains as a result of keeping the daily schedule. Attention was centered on the performance of the health habits for their own sake, and with the ultimate aim of better physical condition.

After a year's use in the colored schools the record was

dropped there: the children were perhaps too anxious to please, and accuracy suffered thereby. After two years it was experimentally dropped from the white schools. Teachers continued their emphasis on the health habits, and health teaching in general did not falter, but short-term tests of health performance in the spring showed in all schools a lower percentage of satisfactory achievement. At a general conference in the fall of 1928 it was decided to restore the daily record. The evidence showed that without the record it was harder for the teacher to find pegs on which to hang her direct health teaching and to secure regularity of practice. Success with the record, of course, depended upon the teacher's sincerity and leadership. Those teachers in Athens who kept their own records with the children, drank milk at school, observed the regulations as to coffee and hours of sleep, and watched their own weight, felt that the influence they gained in this way was worth the effort.

Other Health Teaching

Health teaching, which began with the unadorned essentials of healthy living, did not stop there. Instruction was based on textbooks (above the third grade), on current events with a health accent, on health material found in many other subjects. The daily routine was illustrated, dramatized, put into song and story, and related to all the normal life of the classroom. In the first and second grades the trend of the activities with which health was interwoven—reading, writing, spelling, story-telling, handwork—followed the seasons. In the third grade the themes of house-building and body-building freshened up the familiar health precepts. Third grade teachers who found their children in need of a supplementary reader in 1925 turned naturally to one with health as its major topic. In the fourth and higher grades the textbook work was varied and rein-



PHYSICAL EDUCATION IN ATHENS WAS THE PLAY
SIDE OF HEALTH EDUCATION. SUPERVISED AND
FREE PLAY WERE PART OF EACH DAY'S PROGRAM
IN THE SCHOOLS



SEVENTH GRADE BOYS PUTTING UP WINDOW BOARDS
TO IMPROVE CLASSROOM VENTILATION. HEALTH
TEACHING BEGAN WITH THE CHILD AND THE
SCHOOL ENVIRONMENT

forced by the correlations that naturally arose between health and geography, history, and all forms of expression.⁹

The principles of healthful living were not only taught but, so far as possible, actually practised in the school. Drinking milk, playing outdoors in the sunshine at recess, washing the hands before the mid-morning lunch, regular visits to the toilet, the proper ventilation and lighting of the classroom, standing and sitting "tall," and protecting others from infection were all considered as factors in the school hours of a health day, to be observed carefully for their own sake and for their effect at home.

The Milk Lunch

The schools themselves had bad health habits to unlearn. The custom in Athens was to eat the chief meal of the day at two or three, and school hours—from nine to two—were adjusted to this schedule. With six or seven hours between breakfast and dinner, the children naturally wanted refreshments at recess. The white schools, which were hard put to it to finance the purchase of special equipment which the city could not supply, were in the habit of selling candy, "wieners," and similarly popular but undesirable refreshments, putting the profits into school purchases. It was a real sacrifice when they accepted cheerfully the ruling, made by the Board of Education at the request of the health educator, that this practice be discontinued.

As a substitute for this type of refreshment, and for the almost equally undesirable lunches which were often brought from home, the white schools instituted a milk lunch (usually with crackers) which was served in the classroom in a ten-minute rest period. This was used definitely as a means of teaching children to like milk and as an occasion for informal

⁹ As it is planned to publish later a fuller statement of health teaching methods used in Athens, further details are not given here.

discussion of food values. By December, 1925, 44 per cent of the children in the white elementary schools were drinking milk bought at school or brought from home or furnished free, and the number increased steadily. The free milk, provided at first by a variety of civic, church, and other organizations, by the Tuberculosis Association, and by the Board of Education, was later provided entirely by the Board of Education. The superintendent of schools and the principals expressed the opinion that children were more attentive and better behaved during the closing hours of the session because of the milk lunch.

The colored schools faced a difficult situation. Most of the children came from homes in which both parents were employed during the day. There was no adequate breakfast, because the parents had to leave before the children were up. There was no hot dinner, because they were still away. Supper was late. Children brought to school such lunches as one cold sweet potato, or a biscuit and bit of fried meat. Two of the schools attacked this problem by serving hot food at mid-day. One worked out a cooperative plan under which different teachers in turn prepared one simple hot dish—usually a soup for which the soup-bone might be contributed by the butcher—and served it at a nickel a portion. There was great rejoicing when the persistent efforts of the principal secured a good range and equipment to replace the makeshifts with which the work had been begun. Even at this rate, however, the food was too expensive for some children, and it remained something of an irony to teach the “right choice of foods” under such conditions.

Weighing and Measuring

Scales had been provided for the elementary white schools in Athens before the demonstration and were placed in the

colored schools by the Board of Education in 1924. The children were weighed every six weeks, and measured twice annually, by the teachers. The nurses coached new teachers in the effort to secure accuracy and uniformity of practice. In using weight as an index to health, stress was laid on steady and consistent gain rather than on the percentage of deviation from a standard. Immediate gains in weight were never offered as goals for a child's effort; the annual weight curve was emphasized instead.

Even with weight curves certain difficulties presented themselves. For example, one might tell a thirteen-year-old girl, in view of her age and height, that she should gain a pound a month. If the child grew two or three inches between September and February, when heights were taken, her expected average in February was out of all proportion to the rate of growth which she had been urged to try for during the year. Athens teachers learned that any method of basing health teaching on the desire for specified gain in weight must be handled with extreme care and individualized just as far as possible in view of medical findings and all other related information.

After three years' work special care was arranged for children who had not grown consistently and who were diagnosed as seriously defective in nutrition. This project was sponsored by the Tuberculosis Association and is reviewed by Dr. Walker in his appraisal.¹⁰

Play

The five-hour school session in Athens was broken by three fifteen-minute periods of physical activity. One of these, during the demonstration, was devoted to physical education as such and the other two to free play. Before the demonstration physical education consisted chiefly of

¹⁰ See page 116.

formal exercises. During her first year on duty the physical educator prepared the teachers, by group instruction, to substitute for this various types of organized play, carefully planned but flexibly used. Games for both indoor and outdoor use were collected and taught to the teachers, and a schedule calling ordinarily for three sessions a week of squad games and two of dancing and rhythms was put into effect.

Games were graded so that each child might develop, both in bodily skill and in adaptation to the group, up to the limit of the capacity of average boys and girls of his age. Only simple apparatus was provided. The minimum for each school, white or colored, included swings, see-saws, and horizontal bars; equipment for soccer, baseball, volley ball, and similar games was kept on hand by Board of Education appropriation. Dancing was somewhat handicapped by lack of piano music, but it was possible to teach simple dances which, because of their organization, had real social values, and these were chosen in preference to those which involved complicated solo steps. Experimental use of dance patterns from the various familiar sources convinced the supervisor that these American children got more real enjoyment out of the old American dances than out of those imported from Europe. Negro children were so inventive and so much more advanced in their grasp of rhythm than the white children that they introduced many original variations in the games which were taught them. Their own traditional games, unknown to the literature of physical education, were recorded in some instances by the physical educator.¹¹

The play program considered the growth needs of the child and attempted to increase his desire for vigorous and wholesome activities; to improve his health practices; to interest him in steady gains in weight. The desire for skill

¹¹ See Willie Dean Andrews, Negro Folk Games, *The Playground*, June, 1927.



A LIVELY INTERPRETATION OF PHYSICAL EDUCATION ON A SCHOOL PLAYGROUND IN ATHENS. COMPETITIVE EVENTS WERE CAREFULLY SAFEGUARDED AGAINST ABUSE



MAY DAY IN ATHENS WAS A GALA AFFAIR, AND
HELPED TO AROUSE PUBLIC INTEREST IN HEALTH
AND PHYSICAL EDUCATION. IT GREW EVENTUALLY
INTO A "PLAY WEEK"

in play was a powerful incentive to the child for the improvement of his daily habits and for the removal of physical handicaps. Since play was a natural end in itself no attempt was made in Athens to warp its essential nature by foisting "vegetable games" or the like on the children.

Two safeguards were necessary. A few cases came to the attention of the school physician in which vigorous exercise was considered unwise, and the teachers were careful to protect such children from overstrain. Underweight children who had been specially examined were given rest periods in place of playground work, the Board of Education providing cots for this purpose.

The other safeguard was against the evils of over-accentuated competition. Before the demonstration the spirit of interschool rivalry was very strong in Athens, and an annual field meet kept it so. In the new program the sharp edge of competition was toned down in play through the emphasis on self-sufficient group activities and on the pleasure of improving one's own individual record. May Day, repeated each year from 1925 to 1927, was a joint community festival rather than a chance to beat some other school, and the growth in community recognition of the value of such play was reflected in 1928 by the shift of emphasis to a play week, in which all sorts and conditions of citizens, young, old, and middling, took occasion to express the spirit of the season by engaging in outdoor fun.

Posture

Special attention was paid to the correction of faulty posture in school children and the development of good posture habits. This work was the concern primarily of the physical educator, who worked closely with the pediatrician. Posture examinations, supplementing the regular medical examinations, were given to children showing

particular difficulties, and classes for posture training were organized for them under the pediatrician's direction. Study of the results indicated that the children presenting postural difficulties fell into two groups. The first group, those whose trouble was caused by ignorance and faulty muscular habits, improved rapidly under instruction and might be left to the care of the classroom teacher, who could not only help them with general training but could at the same time raise the general level of posture among all the children. The second group, children whose trouble was associated with nutritional or other deficiencies, could be helped temporarily by special training, but they remained, as they always had been, subjects for special study and care by the teacher, the nurse, the physician, and the parent. Emphasis was gradually shifted, therefore, from the specialized program to a more general spread of posture training through the classrooms, with attention concentrated on more fundamental defects in the case of children whose physical condition was such as to influence their posture unfavorably.

Putting Two and Two Together

It was recognized that it was unsafe to promise the child, or to allow him too confidently to expect, that gain in weight or in motor skills would directly result from the improvement of his health habits or the removal of his physical defects. But it was considered legitimate and desirable to keep before him a record of his physical development as a whole child. An individual health record was, therefore, introduced in 1925 which combined a summary of his health performance, as he himself judged it, a record of the correction of his defects, his weight curve compared with the average growth curve of children of his age and height, and a record of his motor skills. This is reproduced, in part, herewith. Though

Height: Sep. <u>54</u>	Feb. <u>55</u>	Age: Sep. <u>9</u>	Feb. <u>9</u>
6 weeks period ending			
<u>HABITS</u>			
Good sleep habits	✓	✓	✓
Good food habits	✓		✓
Good care of body		✓	✓
Good play habits	✓	✓	✓
Milk at school	✓	✓	✓
No. of absences because of illness of self			
<u>IMMUNIZATION</u>			
Vaccination	★		
Schick test (+ or —)			
Toxin-anti-toxin	☆		
<u>HEALTHY BODY†</u>			
Eyes	☆		
Ears	★		
Nose	★		
Throat	★		
Mouth	☆		
Skin	★		
Chest	★		
Weight	☆		
Posture			

†Each item will be starred by nurse when condition is judged normal.

Summary health record. The performance of health habits was reviewed each six weeks. Stars of one color were used for items which were found satisfactory at the medical examination, stars of a second color for corrections secured later, and a star in the margin for the completion of all needed corrections.

*Average weight for height and age: 70

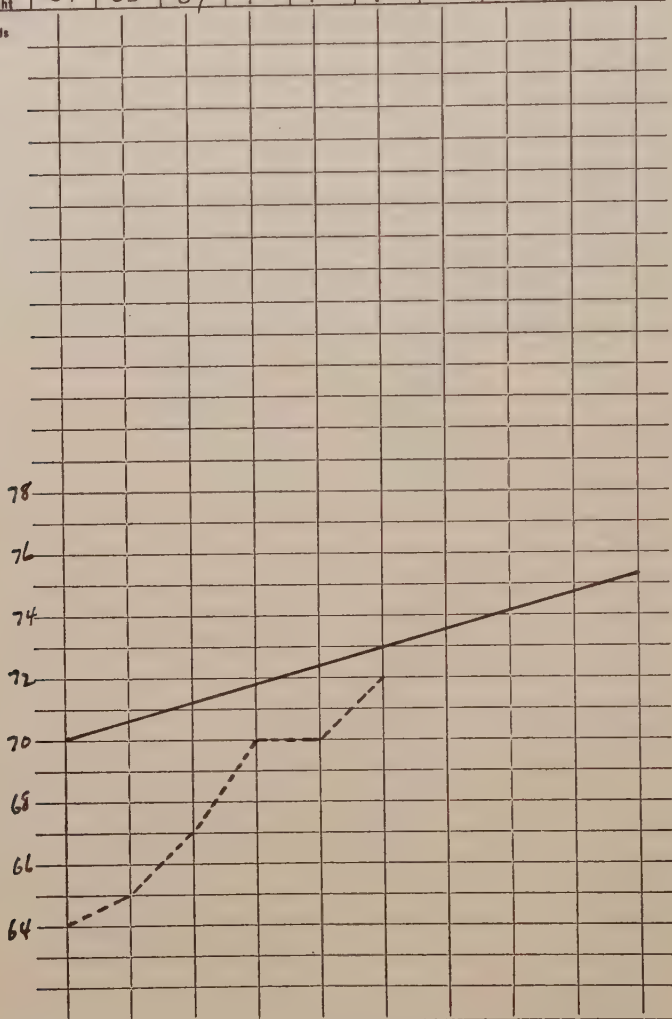
*Average annual growth for age and sex: 5 1/4 lbs

(Black Line)

Approx. Date of Weighing	9/15	10/27	12/8	1/19	3/2	4/13	5/25	7/6	8/17	9/28
Actual Weight	64	65	67	70	70	72	70			

(Red Line)

Pounds



*Average growth curve plotted so as to pass through average weight approximately on child's birthday.

The expected or desirable weight curve is the solid line; the actual weights are shown by the dotted line. A record of motor skills appeared on another page of the record.

it proved very interesting to the children, it involved too much clerical labor to be continued in full. With the placing of the school health record in the principal's office in the school year 1927-1928, the need for a duplicate record of corrections was lessened. The teacher then had access to the files and kept notes in her own classroom notebook of the health status of her children, always with the assistance of the nurse, the health educator, the oral hygienist, and, after each annual examination, of the physician. Corrections were, therefore, omitted from the individual record, and for permanent use the record of motor skill was also dropped. The child's summary of his health habits and the growth curve were still currently entered on the individual record, which was passed on from teacher to teacher so that in beginning work with a new class each teacher had before her the essential facts about each child's health behavior to supplement the school medical and nursing record in the principal's office.

The Departmental Schools

In the departmental schools, which take the place in Athens of junior high schools, health teaching was a matter of coordinating the work of the various departmental teachers. A special instructor was assigned to have charge of health work, including physical education for girls, while a part-time teacher directed physical education for boys. Civics, geography, and reading offered numerous opportunities for the use of health material, and projects involving the study of foods and other health considerations were frequently developed.

Specific health instruction was given in two periods each week. Health habits were emphasized and records of health performance, devised by the children, were kept for such periods as they seemed desirable in each class.

A monthly summary was also made on which the child plotted his own growth curve and entered his rating in certain motor skills. The major responsibility for both performance and recording was thus placed on the child. Textbooks were used in both the sixth and seventh grades, and simple experiments were frequently used to illuminate the work in physiology and hygiene.

Rest periods with special lunches were scheduled for children needing special care. These children weighed themselves weekly and kept their own weight charts. Special campaigns for good lunches, early and regular bedtimes, school milk drinking, "100 per cent" dental corrections, and the like were developed out of classroom discussion. The nurse's service as go-between for school and home was as valuable here as in the elementary grades.

In physical education the squad organization characteristic of the elementary schools was retained. Classes were held three times a week for 35-minute periods—usually two of games and athletics and one of dancing. Dances which could be used elsewhere than on the playground were taught. Recess periods were left free for unsupervised play.

Physical Improvements in the Classroom

The health education program, added to the established inspection of schools by the sanitary officers, was influential in altering for the better many details of school environment, though the financial condition of the schools prevented major improvements. After long effort, thermometers and window boards for the control of ventilation were installed in all the schools. Shades were replaced to improve both lighting and ventilation. Blocks were provided for a rough adjustment of seats and desks to children's heights. Toilet rooms were improved where necessary, and plumbing and drinking fountains were replaced in one colored school.

Heating plants were improved; blackboards rearranged in some cases to permit better lighting; paper towels were provided to facilitate handwashing before meals. Cots were installed in the white schools for the use of underweight children under special care at rest periods. Lunch-room facilities at the high school were bettered. Scales, as has been mentioned, were installed in the colored schools, which had none before the demonstration, and measuring boards were put in all schools. City water was piped to a colored school where a well had been condemned.

The Rural Schools

In accordance with the request of the county Board of Education, and with the hearty approval of the Clarke County Child Health Demonstration Committee, a modest health education program was introduced into the rural schools in 1927-1928.

Health education was discussed at each of the monthly meetings for white and colored teachers during this school year, and bulletin material prepared by the health educator was placed in the teachers' hands. Girls from one of the city schools conducted demonstrations of squad play to help the country teachers to begin systematic work in physical education.

To stimulate interest in a sound health program two contests were planned. In the white schools a blue ribbon campaign, similar to that used in the Red Cross Child Health Demonstration in Mansfield, Ohio, and in the Commonwealth Fund demonstration in Rutherford County, Tennessee, was instituted. The blue ribbon was to be awarded to children who were "satisfactory in attitude toward school work," "normal in their social contacts with schoolmates and teachers," "reasonably cooperative in the practice of health habits" (as measured by a six-weeks'

use of a weekly health record similar to the daily record in use in the city schools), free of important correctible defects (as determined by the school physician in routine or special examinations), and immunized against diphtheria and smallpox. The results exceeded expectations and when the returns were in, it was found that out of some 600 pupils 260 had registered for the award and 192 of them had qualified. In the colored schools, as a step toward better diet and sanitation, an award was offered to the school showing the largest percentage of children whose homes had both a garden growing leafy vegetables and a sanitary toilet. Almost every home had a garden, and at the end of the contest 40 per cent of the 270 homes represented at the 14 schools had sanitary toilets.

The blue ribbons were awarded at a county play day which was itself a notable innovation. It had been the custom to hold an annual county field meet at which the usual competitive athletic contests were staged and which produced more rancor than good feeling, since the larger schools always won. On the initiative of the physical educator and under her guidance, a play day was successfully substituted for this event, the children from all schools being marshaled by their teachers, reorganized into squads distinguished by colored arm-bands, taught to play group games, and pitted against each other in contests of various sorts which, because the lines between schools were broken down, and the play was an end in itself, left no hard feeling after the day was over.

EVIDENCES OF PROGRESS

An effort to improve the health attitudes, health behavior, and health status of school children defies any complete or convincing measurement. Evidences of change must be looked for primarily in the home. Late in 1927 an effort

was made by questionnaire to determine what Athens parents thought of the effect of the school health program. Answers to 29 distinct questions were requested by the superintendent of schools and the health educator. In the white

REPORTED IMPROVEMENT IN SPECIFIC HEALTH HABITS,
BY ORDER OF FREQUENCY

<i>In white families</i>	PERCENTAGE OF REPORTS OF	
	YES	NO
1. Eating more fruits and vegetables	94.0	6.0
2. More interested in keeping himself clean . .	91.0	9.0
3. Playing out of doors longer hours	90.0	10.0
4. Drinking more water	89.3	10.7
5. Drinking more milk	88.4	11.6
6. Paying attention to daily bowel movement .	87.8	12.2
7. Eating more food	86.4	13.6
8. Willingness to eat foods refused before health teaching began	85.8	14.2
9. Desire to have needed corrections of defects made	85.6	14.4
10. Going to bed earlier, sleeping with open windows	85.3	14.7
11. Effort to improve posture	84.6	15.4
12. Brushing teeth more regularly	82.6	17.4
13. Eating more cooked cereal	79.0	21.0
<i>In colored families</i>		
1. Eating more fruits and vegetables	99.7	0.3
2. More interested in keeping himself clean . .	98.4	1.6
3. Playing out of doors longer hours	97.8	2.2
4. Drinking more water	96.2	3.8
5. Eating more food	96.2	3.8
6. Paying attention to daily bowel movement .	93.3	6.7
7. Brushing teeth more regularly	91.7	8.3
8. Effort to improve posture	91.1	8.9
9. Drinking more milk	90.0	10.0
10. Going to bed earlier, sleeping with open windows	87.4	12.6
11. Eating more cooked cereal	85.8	14.2
12. Willingness to eat foods refused before health teaching began	84.0	16.0
13. Desire to have needed corrections of defects made	76.9	23.1

schools questionnaires were distributed to children in all grades through the seventh, though their use was understood to be entirely voluntary. In the colored schools they were given only to families where a parent or an older child was known to be able to read.

From white homes 1,237 questionnaires were returned; from colored homes 324 were returned. In the white group 999 parents believed that children's health habits had improved, 767 thought children's health was better, and 685 had secured the correction of physical handicaps. Among the colored families 290 said health habits were better, 272 saw improvement in their children's health, and 148 reported corrections. The same items in health teaching struck home most frequently in white and colored families, but there were interesting variations in the reported effect of other items.

This testimony is of value so far as it goes in indicating that Athens parents considered that the health work brought about genuine and valuable results. A piece of corroborative evidence with respect to one health habit—the care of the teeth—is found in the examiner's findings as to oral hygiene in four successive years:

INCIDENCE OF ORAL HYGIENE DEFECTS (MODERATE AND SEVERE) PER 100 CHILDREN EXAMINED

	<i>Total</i>	<i>White</i>	<i>Colored</i>
1925	31.4	29.4	35.9
1926	26.8	25.9	27.7
1927	24.1	24.6	22.7
1928	17.1	14.5	20.4

It is hard to find any objective tests which measure progress in so intangible a matter as general health. There is evidence, in the record of absences in the white elementary schools, that illness played a decreasing rôle in keeping

children out of school. One school where nursing supervision was especially close showed a steady and spectacular decline in absences reported as due to illness—2,586 pupil-days in 1925–1926, 1,509 pupil-days in 1926–1927, and 1,286 pupil-days in 1927–1928—and the percentage of absences credited to illness fell from 4.3 in 1925–1926 to 2.2 in 1927–1928. But there was so much difference between schools both in total absences and in illness absences, the period was so short, and the net decrease for the schools together was so slight, that no great importance could be attached to the record.

The child's deviation from standard weight for his age and height has frequently been used as a rough index of his physical condition, though it is not very satisfactory unless it is closely related to clinical findings. In Athens, as has been said, teachers were encouraged to emphasize yearly growth rather than deviation from standard weight. But the figures as to deviation are interesting in so far as they show a steady decline in the percentage of school children found markedly below standard weights:

INCIDENCE OF UNDERWEIGHT (10 PER CENT OR MORE)
PER 100 CHILDREN EXAMINED

	<i>Total</i>	<i>White</i>	<i>Colored</i>
1925	24.5	27.1	18.6
1926	19.8	22.7	17.1
1927	19.1	20.1	16.3
1928	13.6	16.4	10.1

Immunity to prevalent communicable diseases is certainly a health asset, though it is hardly a measure of individual health attainment. The degree to which Clarke County children were protected against smallpox and diphtheria is noted in another connection.¹²

¹² See page 109.

KNOWN CORRECTIONS OF CONDITIONS NEEDING MEDICAL
OR DENTAL CARE IN FOUR SCHOOL YEARS,
1924-1925 TO 1927-1928

	TOTAL	CITY SCHOOLS		RURAL SCHOOLS	
		White	Colored	White	Colored
<i>Children with:</i>					
Teeth filled or extracted . . .	2,044	1,520	237	260	27
Teeth cleaned	3,009	2,476	97	395	41
Tonsils or adenoids removed . . .	222	150	40	27	5
Glasses fitted	281	232	29	17	3
Other eye corrections	59	34	7	18	0
Ear corrections	43	29	8	5	1
Orthopedic corrections	12	6	2	4	0

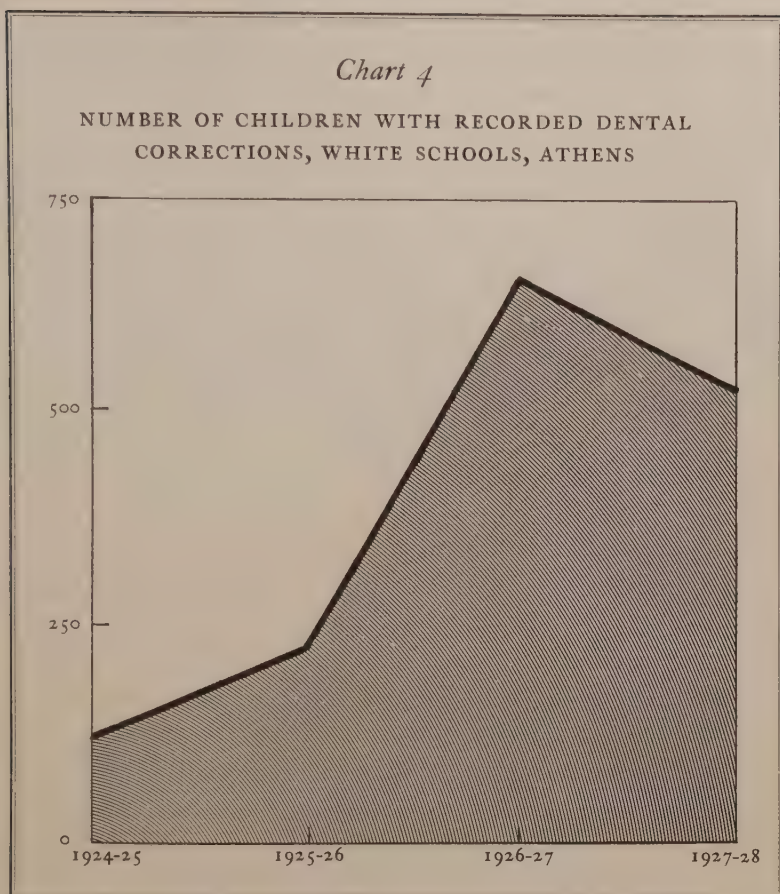
When it comes to specified instances of medical or dental treatment for the correction of defects it is possible to speak with some degree of accuracy, though there must have been many instances in which a parent was stimulated to take a child to the doctor for treatment which never got recorded by the nurses. The growing volume of dental corrections is indicated in *Chart 4*. The totals of corrections known to have been made in the four school years during the demonstration are also interesting.¹³

The opportunities for effective supervision and follow-up of individual children were so different in the city and coun-

RATE OF CORRECTIONS OF CERTAIN DEFECTS PER 100
GRADE SCHOOL ENROLLMENT, 1927-1928

	A.P.H.A. STANDARD	WHITE SCHOOLS		COLORED SCHOOLS	
		City	Rural	City	Rural
Teeth defects	19.0	31.1	29.6	9.1	2.5
Oral hygiene	30.0	39.4	3.9	2.6	1.1
Tonsil and adenoid defects	2.5	3.4	1.7	0.9	0.5
Vision defects	5.0	5.0	0.8	0.7	0.2

¹³ It should be noted that the policy of both demonstration and local physicians in recommending the removal of apparently infected tonsils took full account of the child's health history and was in general conservative.



try, and in white and colored homes, that it is hard to gauge the success or failure of the whole drive for corrective service. If white children in the city schools are considered alone, the ratio of corrections to school enrollment, in the final year of the demonstration, was well above the standard set by the American Public Health Association in its Appraisal Form for dental treatment, dental prophylaxis, and tonsillectomies, and equal to the standard for glasses fitted. The ratio of corrections for white children in the

rural schools was above the standard for dental treatment but below it for other items, and the ratio for colored children, in either city or rural schools, did not approach the standard.

The long-term dividends of such health services as were provided for school children in Clarke County can hardly be measured. But the fact that the yearly average of deaths among children of school age was almost cut in half during the demonstration¹⁴ is a significant indication of their immediate influence.

¹⁴ See page 16.

CHAPTER V

WHAT WAS DONE FOR BABIES AND YOUNG CHILDREN

Health centers offered mothers an opportunity to learn from a doctor how to keep their children well and to discover special needs for treatment. Nurses taught good child care in the homes. A quarter of all the children under six years old had such service. Between one month and one year of age, the death rate for white babies under care was only one-sixth of the rate for those not under care; for colored babies under care, one-third the rate for those not under care.

THE special objectives of the five years' work for babies and young children were to spread the knowledge of sound hygiene among mothers, to show the advantages of attention to physical handicaps at their earliest appearance, to accustom mothers to regular health supervision of their children by doctors and nurses, and to interest local physicians in giving periodic health supervision to their own patients. While one physician in Athens was giving excellent preventive care and a beginning had been made of group conferences, there was much for the demonstration to do in pointing the way to such service for the county as a whole.

The accepted public health tools for accomplishing these ends are two: home nursing visits and health conferences. In Clarke County the public health nurses, giving generalized service to all members of the family, made more than a quarter of all their home visits primarily in the interest of infants and preschool children. The educational program for these children came to focus in the health center—a meeting place for physician, nurse, parent, and child, where children were weighed, measured, and examined, and where the physician gave the mother health advice which the nurse, in many cases, repeated in her home visits. *Chart 5* shows the extent to which these services reached Clarke County infants and preschool children. It is interesting to note that nearly half of the children served, at all stages of the demonstration, had a medical examination. Some had a medical examination but no nursing visit; among these were preschool children brought in to the health center in the annual “round-up” by parent-teacher and other lay workers.

Since the health centers concerned intimately the private practice of local physicians (though it affected potential



FOR SUCH MOTHERS AS THIS THE ROLE OF THE
HEALTH CENTER WAS OFTEN TO PAVE THE WAY
FOR HEALTH SUPERVISION BY THE FAMILY DOCTOR



THE MIDWIFE OFTEN HELPED TO PERSUADE NEGRO
MOTHERS TO BRING THEIR BABIES TO THE HEALTH
CENTER AND WAS PROUD TO ADD HER INFLUENCE
TO THAT OF THE DOCTOR AND NURSE

practice rather than that which already existed, for there was little health supervision of this type before the demonstration began), their operation was covered in detail in the agreement between the demonstration and the Medical Society.¹ It was agreed in writing that only well children would be received; those who were ill would be sent at once to their own doctors or to the free clinics. But well children, it was agreed, would be received without regard to their economic status, since the function of the centers was to educate and not to give treatment. The agreement read, in part:

The parents of these children will be urged to consult their physician in reference to their children's condition and to abide by his decision. The advice or information which will be given at the center will be restricted to bathing, clothing, diet, water, fresh air, exercise, rest, etc. Formulae for normal feeding may be written for infants needing them. Copies of these formulae will be furnished to the family physician. . . .

It is believed that cod liver oil or its emulsion is a food and not a medicine, and as such may be advised at consultation. Advice as to orange and tomato juice as health-procuring foods may also be given.

The Health Center

In the fall of 1924, when a nursing staff had been assembled, this program was put into full operation. The first question of policy to be decided was whether the children should be brought together to one or two central points or the centers should go to the children. While the first plan offered economies and conveniences, it was decided to scatter the conferences so widely that each might become a focus of neighborhood education, easy of access, and easily observed by the one or two physicians whose practice lay in that neighborhood. Centers could then be established or dis-

¹ See page 10.

continued as public interest warranted. Ten centers were opened in 1924, one in 1925, and two in 1927. The largest number in operation at one time was eleven; at the end of the demonstration eight were active.

Athens itself was served by four centers for white children. One received chiefly children from comparatively well-to-do families, two from mill families, and one from the intermediate group. One was closed in 1927 as an experiment in policy²; one was discontinued in 1928 because of dwindling attendance; the other two remained open throughout the demonstration. Three city centers were provided for colored children; one faltered for a time, but all were active at the end of the demonstration.

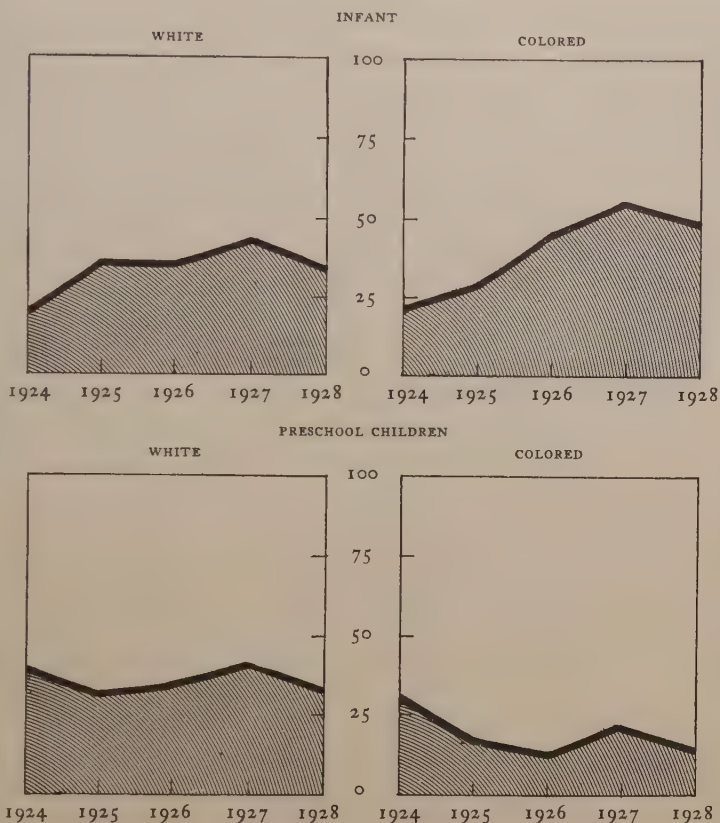
Outside the city three village centers for white children operated for two or three years; two of them were in mill villages where shifting population and unemployment handicapped their work. In 1927 two centers were established in farm communities in close connection with the home demonstration clubs led by the county agent; these showed more vigor, and one registered the highest average attendance per session of the whole group. One colored center, at an independent school, was begun with enthusiasm, suffered reverses, was revived, and was active at the close of 1928.

Neighborhood cooperation with the health centers was naturally most extensive in the city, where health chairmen appointed by the parent-teacher associations headed the volunteer services. In the colored and rural centers a teacher was usually the most valuable point of contact with the neighborhood, and there was little formal organization. An effective piece of teamwork was developed at one colored center which met alternately in two small churches where the colored midwives, under the nurse's leadership, formed a "Sunshine Club" for the babies they

² See page 89.

Chart 5

PERCENTAGE OF INFANT AND PRESCHOOL POPULATION IN
CLARKE COUNTY WITH HEALTH CENTER EXAMINATION
OR NURSING VISIT



delivered, shepherded them into the health conferences, and helped to keep mothers in line with the physician's instructions.

When volunteer help was available it took the form most

often of hostess service at the health conferences. The teacher or mother who acted in this capacity was a valuable ally of the nurse, not only in the management of the conference, but through the support which she gave the work in neighborly conversations between times. In some cases neighborhood interest led to the partial furnishing of the health center by local gifts, and in general those centers for which the neighborhood took most responsibility were the most successful.

It was usually the nurse who interested the mother to the point of making her first health center visit, though there were always some mothers who sought conferences on their own initiative or were introduced by the health chairmen, and the prestige of the examination brought in a small number of temporary residents and even non-residents. Not more than fifteen interviews were scheduled for each three-hour session, and the nurse was responsible for mailing post-card invitations to those mothers who received appointments. The limitation was maintained even when it was necessary to refuse appointments for a particular day, because it was a fundamental policy not to hurry the interview. The primary purpose of the conference was to give the mother full opportunity to discuss the child's health needs and behavior with the physician. Return visits were scheduled at intervals varying from a week to six months, as the physician thought best. Formal notification of a return appointment—coupled with a real desire for continued supervision—was often enough to bring mothers back for regular visits, but with most of the millworkers and Negroes it was necessary for the nurse to visit the home and lay stress on some particular health problem that needed attention in order to get the mother to come regularly.

All well babies and children from three weeks to six years

of age were admitted to the center. Many of the less intelligent mothers sought to use it as a source of free medical care, but children showing any illness, other than a condition arising from improper feeding, were uniformly referred to the practising physicians or the hospital. A few cases were referred to the centers, through the nurses, by family physicians.

Extent of Health Center Service

During the five demonstration years the health centers provided the opportunity for no less than 2,101 visits of babies and 4,289 visits of preschool children to the examining physician. The visits of white babies totalled 1,214, of colored, 887. Visits of white preschool children totalled 2,913, of colored, 1,376. Variations in attendance between individual years are not very significant because they were affected so directly by administrative changes. The first year's totals are swelled by a series of rapid examinations, without follow-up, made for measurement purposes by a special squad of workers. The last year's are reduced by the closing of one of the most successful centers as a deliberate experiment in referring children to private physicians for supervision. It is interesting to note, however, that there was a slight but almost uniform tendency for mothers to make increasing use of the center for individual children: the average number of visits for each white baby each year was 2.2 in 1925, the first complete year of regular service, and 2.7 in 1928; for each white preschool child, 1.2 in 1925 and 1.8 in 1928; for each colored baby, 3.6 in 1925 and 2.9 in 1928; for each colored preschool child, 1.5 in 1925 and 3.5 in 1928. These averages, of course, are no more informing than averages are apt to be: there were many children who came but once, and many children who had a long series of visits. In a group of 101 children, mostly from

"good" homes, whose records were given special study in connection with the closing of the center already referred to, the average interval between visits was about three months. Of 51 children who had been brought to this center before they were a year old 26 had made 5 or more visits; one of these had made 15, two 17, and one 35 visits.

While the health centers were open to children at all times, a special campaign fostered by the Parent-Teacher Association Council brought many children to the demonstration physician for examination just before they entered school. In following up these examinations the nurses tried particularly to get as many defects as possible corrected before school opened. As a result of such campaigns 27 per cent of the children entering the 1-B grade of school in the fall of 1924 were examined, and the proportion rose steadily till, in 1928, 96 per cent of the entrants were examined.

Health Center Procedure

At the health centers the nurse and usually a volunteer hostess received the mothers and children in an anteroom. For the first two years the nurse who worked in the surrounding district was in charge. In 1926, as an experiment in saving nurses' time, one nurse was assigned to duty at all the health centers. This resulted, however, in a measurable loss of interest among the mothers, who preferred to meet their "own" nurse there, and the original plan was restored. Health posters, a model layette, sample nursery furnishings and the like were kept on hand, and while the children waited their turn with the physician the nurse did such health teaching as she could. Babies and children were undressed, weighed, and measured before the medical examination. A record of past health history was taken on the child's first visit. The nurse accompanied the mother and child

into the examination room and was within call throughout the examination if the physician wished to give special instructions for follow-up.

A complete examination of the type usually given in health centers was made on the child's first visit and as often thereafter as it seemed to be needed. In the course of the examination the physician got from the mother a health history of the child since the last interview and then gave particular attention to conditions which might have played a part in recent disorders. Thus the otoscope was used, not routinely, but wherever there was a history of ear or throat trouble; the chest examination was emphasized only when there was a history of tuberculosis contact or other special indications. A nutrition rating was given on the basis of subcutaneous fat and tissue, muscle tone, and color. The mother was urged to go to her doctor or dentist for the correction of serious defects.

The actual examination, however, was only the starting point of health center service. The care of the child, and his health behavior, were the chief concern of the pediatrician, and the health teaching which he did in leisurely, patient conversation with the mother was the most important part of the conference. Often a child free of specific physical defects, but undernourished or "nervous," presented a difficult problem because of the necessity of slowly altering the mother's attitude; one of the mothers who was afterward most grateful for the pediatrician's help came four or five times before she got up her courage to tell the grandfather that he mustn't feed the boy every time he whimpered, and to let her son go hungry when he wouldn't eat his turnip salad.

Careless feeding habits were found in all types of families. Among the poorer families special problems were created by an indiscriminating reliance on condensed milk in feeding

babies, and by the general habit of cooking vegetables in fat. Malnutrition was common among the mill employees. While breast feeding was general it was sometimes unduly prolonged, especially in rural homes.

The defects most commonly seen at the health centers are classified in the accompanying table.

INCIDENCE OF DEFECTS IN 1,153 WHITE AND 645 COLORED
INFANTS AND PRESCHOOL CHILDREN EXAMINED IN
CLARKE COUNTY, 1925-1928

(Ratings of Moderate and Severe)

	NUMBER OF CHILDREN SHOWING DEFECT		INCIDENCE PER 100 CHILDREN EXAMINED	
	White	Colored	White	Colored
Underweight (10% or more) .	95	100	8.2	15.5
Skin	42	40	3.6	6.2
Eyes	32	16	2.8	2.4
Ears	13	5	1.1	0.8
Teeth and gums	85	29	7.4	4.5
Nose and nasopharynx . . .	79	64	6.9	9.9
Tonsils	80	51	6.9	7.9
Heart	7	1	0.6	0.2
Lungs	3	4	0.3	0.6
Abdomen	32	119	2.7	18.4
Genitals	251	227	21.8	35.2
Thyroid	4	0	0.4	0.0
Orthopedic	16	7	1.4	1.1
Nutrition	158	115	13.7	17.8
Rickets	22	19	1.9	2.9

Only conditions sufficiently serious to be referred to physicians for correction are tabulated here, though slight defects were also noted on the record for observation. The skin conditions noted were chiefly eczema and seborrhea, impetigo, intertrigo, furunculosis, and ringworm: a very general lack of personal cleanliness among the mill children is reflected here. The eye defects were chiefly strabis-

mus; the ear conditions, otitis media. The figures for dental defects support the prevailing impression of those familiar with the situation that colored children in the South show better teeth than the white. The more general use of coarse foods and green vegetables in colored homes may have a part in creating this difference. Defects classified under nose and nasopharynx were chiefly adenoids. In the tonsil findings, which show no significant difference between colored and white children, stress was laid on the health history of the child and the evidence of related conditions rather than on the appearance of the tonsils on the day of examination. The heart defects noted were those which appeared to be organic. In the chest examination some acute asthma and bronchitis were discovered and referred promptly to physicians. No attempt was made, of course, to diagnose tuberculosis, but some children were referred to their physicians or to the chest clinic at the hospital on the basis of contact with active tuberculosis or of the child's history and appearance.

The large incidence of defects of the abdomen among Negro children is due to a striking but unexplained prevalence of umbilical hernia. The defects of the genitals, chiefly phimosis and adherent foreskin, occurred more frequently in Negro boys, for whom circumcision was unknown, than in white boys, among whom it was fairly common. In spite of the prevalence of syphilis among Negro mothers few cases of congenital malformations were seen. The findings for rickets, made without X-ray examinations, were of course limited to the most severe cases. It was the impression of the examining physician that a mild type of rickets was prevalent, particularly among colored children who were often left shut up at home while both parents were working.

Health Supervision at Home

The twofold task of the health center—health teaching and the discovery of specific handicaps—laid a twofold responsibility on the nurse: to see to it that the mother actually carried out the health advice which she received at the center, and to persuade her, if possible, to secure the medical or dental treatment which the child needed. New-born infants were visited with their mothers in connection with the maternity service, birth certificates were delivered, and much general health teaching was done at these visits. The nurses also visited, in a typical year, several hundred children who were old enough to come to health centers but who did not. These children benefited by such health teaching as the nurse could do in cooperation with the family physician, if there was one, or on her own authority, if there was not. Infants and preschool children, whether they were registered at the health center or not, were visited in connection with the care of tuberculosis and other communicable diseases, but more than three-quarters of all the nursing visits in this age-group were for health supervision, and a large percentage of these were directly related to health center service and follow-up.³

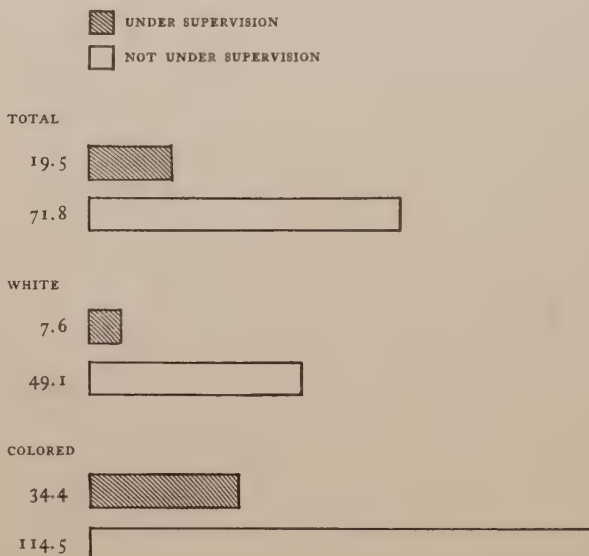
Day after day nurses urged on Clarke County mothers a better selection of foods—particularly the substitution of vegetables and lean meats for the over-valued fat meats; they showed mothers without iceboxes how to keep milk sweet, and mothers who had kept their babies all but smothered in the big bed how to fit up a packing box as a crib; they argued that windows could safely stay open even when cool nights came; they taught cooking so far as that was necessary to relieve young stomachs of the strain of too much fried stuff, hot bread, and bacon-soaked greens;

³ See the tabulation of nursing visits, Table 9, page 158.

they taught the mother how to give sun baths; they planned the baby's bath in cabins where all the water came from an outdoor spigot or well. Not all health center mothers needed such teaching, of course, for many were intelligent and prosperous, and the amount of direct instruction which the physician gave in his more leisurely interviews somewhat relieved the pressure on the nurse.

When corrections were necessary, however, the nurse carried responsibility for seeing the process through to a finish, following the case until a correction had been made by physician or clinic, or pushing the recommendation to the uttermost limit of her power only to see it too often flatten out against a wall of inertia. At the beginning of the demonstration it was decided that it was wise to leave the initiative in securing corrections entirely with the parents, and not to notify the family physician directly that a patient had been advised to consult him, though the nurse often reported the matter informally to the physician by telephone or an office visit. At the end of the five years there was some question in the minds of the staff about this policy, since it frequently left a gap between the health center and the family physician which the nurse did not always bridge, and which might have been closed by the routine interchange of information.

Sometimes the plea of poverty was a screen for indifference on the part of the parents, but genuine want played a very large part in the struggle to get children's teeth, tonsils, eyes, and nutrition brought up to normal. It was the nurse who served as the shuttle between the millhand, the tenant farmer, or the Negro laborer and the hospital clinic, the physician or dentist, and the Red Cross, through which various community groups might be led to give needed help. In some of the mill districts a sense of responsibility for the employee's welfare brought the management into teamwork

*Chart 6*COMPARISON OF MORTALITY RATES IN CLARKE COUNTY,
1925-1928, AMONG INFANTS WITH AND WITHOUT
PUBLIC HEALTH SUPERVISIONONE MONTH AND UNDER ONE YEAR OF AGE
RATE PER 1000 LIVE BIRTHS

with the nurse to arouse interest among apathetic parents and to make it possible to secure needed corrections. In others the shifting labor groups were left pretty much to their own devices and little was accomplished. Hard necessity—since both time and workers were limited—compelled the nurse to write off her books those families from whom a reasonable amount of effort brought no response whatever to health teaching and no interest in the possible benefits of free service at the clinics.

Measuring the Results

When one attempts to set down in cold figures what was accomplished by this effort of the demonstration physician and the nurses to work with Clarke County mothers for the better health of their babies and young children, the first difficulty is that there is no satisfactory measure of health improvement. The whole program for infants and preschool children was educational: its results must be looked for in what the mother learned about child care—and that might be measured in homely experience by less wailing in the night watches, by more firm muscles and fewer “ailing” children, by more resistance to colds and less “colic.” But there are no statistics of such things.

There was, however, a striking advantage in death rates among both white and colored children under care as compared with those not under care (*Chart 6*). Among the 1,179 babies one month and less than one year old who had either health center supervision or nursing visits or both, there were 23 deaths—a rate of 19.5 per 1,000. Among the 655 babies of the same age who did not have such care there were 47 deaths—twice as many deaths in not quite half as many cases—a rate of 71.8 per 1,000.⁴ The difference in rates was conspicuous in the case of certain conditions yielding readily to public health effort, as is shown by the table on the next page.

One of the purposes of health work for these younger children was to secure the early relief of physical handicaps which, if neglected, were likely to cause the child increasing trouble. Here every defect corrected was a net gain, but the ratio of corrections to the number of defects found varied widely according to the race and type of defect. In four years 47 children had tonsil and adenoid operations out

⁴ See page 99 for statistics of babies under one month old. The general infant mortality rates are discussed on page 15.

MORTALITY AMONG INFANTS UNDER AND NOT UNDER
HEALTH DEPARTMENT SUPERVISION, 1925-1928

	TOTAL		WHITE		COLORED	
	<i>Under supervision</i>	<i>Not under supervision</i>	<i>Under supervision</i>	<i>Not under supervision</i>	<i>Under supervision</i>	<i>Not under supervision</i>
<i>Number of infants (live births less deaths under one month)</i>	1,179	655	655	428	524	227
<i>Number of deaths, infants one month and under one year</i>	23	47	5	21	18	26
<i>Mortality rate per 1,000 infants: Total</i>	19.5	71.8	7.6	49.1	34.4	114.5
Communicable diseases	1.6	9.1	0.0	0.0	3.8	26.4
Syphilis	1.7	1.5	0.0	0.0	3.8	4.4
Respiratory diseases	6.8	16.8	3.0	7.0	11.5	35.2
Diarrhea and enteritis	5.1	18.3	4.6	21.0	5.7	13.2
Congenital causes	3.4	10.7	0.0	9.4	7.6	13.2
Unknown or ill-defined	0.0	6.1	0.0	2.3	0.0	13.2
Other causes	0.8	9.2	0.0	9.4	1.9	8.8

of 131 children who showed defects; 23 children had eye and ear defects corrected out of 66 who had them; 98 children among 629 who needed corrections of defects of the abdomen and genitals were actually treated by physicians; 6 out of 23 orthopedic defects were corrected; 49 had dental corrections out of 114 who needed such care.

One way of visualizing the amount of work that was done for children under school age is to study the entire group of white youngsters who entered the first grade of school in the fall of 1928, just before the end of the demonstration. Counting in the four public elementary schools and one private school for girls, there were 243 children enrolled in the 1-B grade when school opened. No less than 206 of these children—85 per cent—had been examined at the health centers or visited by a nurse, or both, before they came to school age. A quarter of all the children had first been seen

by the health workers in 1924—four years earlier. A little more than a third were first seen in the year they entered school. The 194 children who had been visited by a nurse had received 861 visits altogether—an average of 4.4 per child. Out of the total group of 243 children 98 had been immunized against diphtheria, 46 had had dental treatment, 18 had had their teeth cleaned by an oral hygienist, 26 had had tonsils or adenoids removed, and 3 had had glasses fitted. It is impossible to say how many of them were sturdier, happier, and better fitted for school because their mothers had learned from the health workers better ways of caring for them. But the mothers knew.

The Private Physician

At the beginning of this chapter it was said that the work for babies and young children was intended “to accustom mothers to regular health supervision of their children by doctors and nurses, and to interest local physicians in giving periodic health supervision to their own patients.” The staff hoped that mothers able to pay private physicians for care would gradually turn to them for regular medical examinations, although they recognized that local conditions made it necessary to plan for continued free service for large sections of the population. Before the end of the demonstration, a deliberate effort was made to transfer one group of mothers, more intelligent and better off than the average, to their own family physicians for continued well-baby care.

The center selected for this experiment was one which had been operated continuously since the beginning of the demonstration in a school building in a good residence neighborhood. As a whole, this group of mothers had had ample opportunity to become well acquainted with the work of the center. A fifth of the children had been enrolled since 1924 and nearly a third had been brought to the

center before they were six months old. After a careful study of the children enrolled, a special effort was made to give each child a final examination and to impress each mother with the need of continued health supervision. Some children were transferred to another health center and the rest were referred, with a reference slip for the mother and a duplicate for the doctor, to their own family physicians. The center was closed in September, 1927.

In January and February of the next year, four or five months later, the nurse in this district made an informal check-up to discover how generally the children referred to private physicians were actually going to the physicians for supervision. Her reports showed that at that time between a quarter and a third of the well children had actually been taken to private physicians for health supervision. It is impossible to determine exactly why the others who had been referred to physicians had not made the suggested contact. Less than a year had elapsed since the center was closed, and it is possible that some of the older children, who did not need such frequent supervision as the babies, would eventually have found their way into the doctor's office for a health examination. A very few mothers reported that they had sought a doctor's advice and had been unsatisfied with it. More said they could not afford to pay for a doctor's service to well children. The drift of the findings seemed to be that while a fair percentage of the mothers who had become acquainted with health center service would pay the family physician for similar service, a larger number must be educated for a longer time before they were willing to do so, and that some doctors and many parents needed a clearer understanding of the medical and economic value of periodic health examinations.

CHAPTER VI

WHAT WAS DONE FOR MOTHERS

Nurses gave prenatal instruction and postnatal care to both white and colored mothers. In 1928 one mother out of four had care before childbirth and one out of three after it. In the group of mothers under care, the maternal death rate for 1925-1928 was less than half the rate for mothers not under care. Among babies under one month of age the rate under care was a fourth less than the rate not under care.

LIKE many other elements in the public health pattern, maternity service was to be found in Clarke County before the demonstration. But it was lightly sketched in. In 1921 and 1922 the single county nurse averaged about 350 visits a year for maternity service. Such prenatal care as was given by private physicians in their own practice seems not to have reached a large proportion of mothers. Hospital deliveries were uncommon among the white women and unknown among the Negroes. Negro midwives, attending nearly a quarter of all births (more than half of the colored births and a scattering few among the white), were without supervision. The law required nothing of them after they had registered their names and addresses.

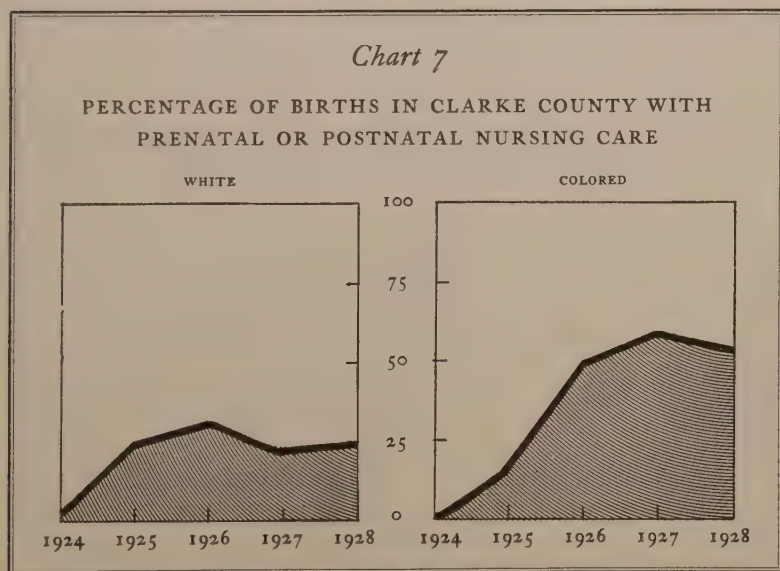
Eighty-seven Negro midwives were found by the nurses when they surveyed the county in June, 1925. Most of them were over fifty and mothers of large families themselves; many were illiterate, but most owned their own homes and felt a certain superiority to the "common nigger." Few could give any account of the way in which they had attained their position as recognized practitioners, but some would tell how they rubbed a little lard and "spurch" turpentine on the stomach to accelerate labor pains, or how they warmed the water for the baby by holding it in their own mouths. The one qualification which they all shared was a degree of religious fervor in performing their tasks.

Nursing Service

The plan of work which the demonstration-health department nurses introduced was that familiar elsewhere—prenatal visits, begun as early as possible in pregnancy, to urge the mother to secure medical examination, to carry out the doctor's instructions after a doctor was engaged, to

teach simple prenatal hygiene, and to guide the mother in preparing for delivery, even to the point of helping her plan and secure a layette; postnatal visits made to teach the proper care of the mother and child, to supervise the care given for the first week or two, and to urge a final postpartum examination for the mother and regular health care for the child. Delivery service was planned for, but the other demands which the generalized program of nursing made on the nurses' time made it impossible to put this into effect.

The nurses were limited in giving this care by two factors: they had to learn about the pregnancy, from the mother or from a neighbor or relative, early enough to be able to give real service; and they must do what they could first of all for the mothers who were most in need of help. It happened that both these factors tended to emphasize the service given to colored mothers rather than to white. The colored mothers who were dependent upon the help of the midwives



were perhaps the neediest in the county, and because they were less reticent about their condition than the shy Anglo-Saxons of the mill community it was easier to find them and help them. Moreover, the nurse had relatively little help from the doctors in finding opportunities for prenatal service.¹ Given all the factors in the situation, the nurses were able each year to find and reach with prenatal service 19 per cent of all the white mothers and 31 per cent of the colored, and to give postnatal care to 22 per cent of the white mothers and 42 per cent of the colored (*Chart 7*). Throughout the demonstration maternity service in general, reaching a quarter of all the white mothers and two-fifths of the colored,² was given to the poor rather than the well-to-do and was perhaps most useful among the patients of the colored midwives.

Prenatal Service

One of the reasons for the relatively unimportant part played by the physicians in bringing prenatal cases to the nurse's attention may be that the nurse often got on the job before the physician was called. Thanks to her intimate acquaintance with her district, to the increasing number of women who asked for help on their own initiative, and to the rapid spread of neighborhood knowledge of the nurse's service, mothers tended to come under care more and more promptly. Thus in 1925 only 8 per cent of the prenatal cases were visited by the nurse before the fifth month of pregnancy, but by 1928 the percentage had risen to 18, and all but 15 per cent were known to the nurses before the ninth month.

¹ A tabulation of the sources from which prenatal cases were referred, and other details as to maternity nursing service, will be found in Table 16, page 165.

² A considerable amount of maternity service was also given by the Metropolitan Life Insurance Company nurse.

The emphasis in prenatal nursing fell naturally on an effort to persuade the mother to secure medical care and submit herself to the useful tests and examinations. If the doctors were slow in sending patients to the nurses, the nurses were increasingly successful in sending patients to the doctors. The percentage of women under prenatal nursing care who secured a prenatal medical examination rose from 40 in 1925 to 64 in 1928.³ Meanwhile the average number of examinations per case increased from less than two in 1925 to nearly three in 1928. Of course one cannot say that the mothers who secured a prenatal examination did so because the nurse advised them to, but it is interesting to note that a considerable majority of the examinations by private physicians in the group under nursing care, and more than nine-tenths of the examinations at the clinic, *followed* the first nursing visit.

The prenatal clinic at the Athens General Hospital, though it was run rather casually when it was first opened, became more and more useful to colored mothers. White mothers, especially those from mill homes who were most in need of care and could ill afford prenatal service from a private physician, were reluctant to attend the clinic, as they had been reluctant to come together in the prenatal nursing conferences which the nurses tried unsuccessfully to start in 1925. Only 17 examinations of white mothers at the clinic appear in the nurses' records for the five years, but 106 examinations were made for colored mothers. It took persistent effort by the nurse to persuade either white or colored mothers to go, however, and she carried much responsibility for the homely details of follow-up—the regular presentation of specimens for urinalysis, the mother's personal hygiene, and most of all the repeated visits, when they were necessary, for venereal disease treatment. The

³ The percentages classified by color will be found in Table 16, page 166.

nurses tried to have all colored mothers who visited the clinic tested for syphilis and treated if the indications were positive, but the results were disappointing.

Postpartum Service

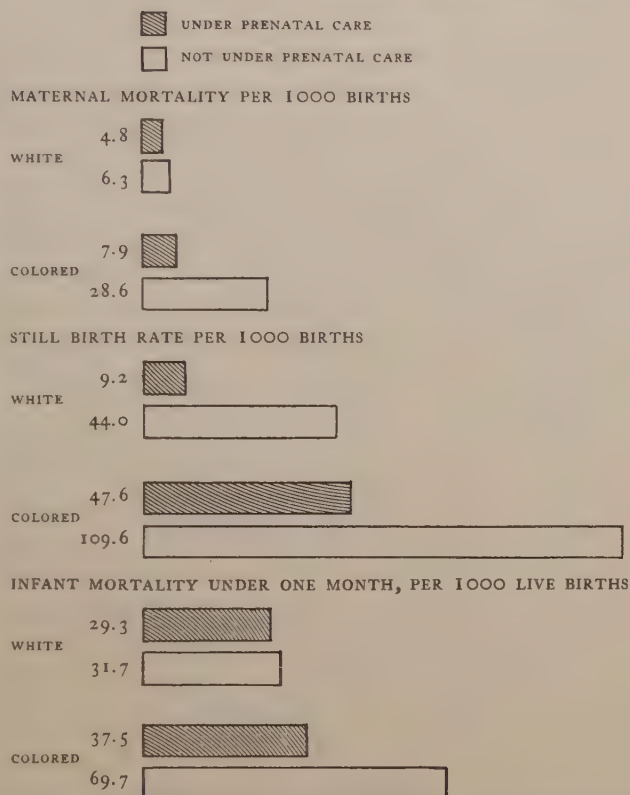
The normal expectation in maternity nursing care in Clarke County was that the nurse, who was serving the family more or less continuously as need arose, would see the mother both before and after childbirth. In the 723 maternity cases which had nursing service during the years 1924-1928, this was true of about 57 per cent. Some cases had prenatal care only, though a good many of these would be accounted for by the removal of the family during the woman's pregnancy, or the reference of the case to the Metropolitan Life Insurance Company nursing service. In about 29 per cent of the cases the mother came to the nurse's attention only after childbirth.

While the purpose in visiting all mothers after childbirth was to give instructive bedside care, the nurse varied her tactics somewhat according to the type of the case. When the mother was colored and had a midwife attending her, the actual care was usually given by the midwife, who considered this part of her responsibility, with supervision and instruction by the nurse. When the mother was white, the nurse was expected to do what she could to teach some other member of the family to give care, but in many mill and tenant-farmer families the task of drilling the grandmother or daughter was almost as onerous as giving the care herself. In all cases, the nurse took occasion to do as much general health teaching, and especially to give as much advice on the care of the baby, as the mother would accept and could understand, and these visits usually found the mother so receptive that a good deal was accomplished in this direction.

Taking prenatal and postnatal service together, the nurses

Chart 8

COMPARISON OF MORTALITY RATES IN CLARKE COUNTY,
1925-1928, AMONG MOTHERS AND INFANTS WITH AND
WITHOUT PRENATAL NURSING CARE



were making at the end of the demonstration, nearly 2,000 visits to more than 250 mothers per year, averaging seven and a half visits to each mother. A visit lasted an average of twenty minutes. Mothers were visited somewhat more frequently after childbirth (5.1 visits per postpartum

patient) than during pregnancy (4.6 visits per prenatal patient).

Measuring the Results

Since the purpose of prenatal care in public health is not only to safeguard the mother and to decrease infant mortality, but to give the child a better start for his whole lifetime, it may well be that the 463 children whose mothers had prenatal nursing care in Clarke County during these five years will be the better for it for years to come. But it is impossible to measure that. There are, however, indications of immediate gain. During the years 1925-1928, 27 mothers died in Clarke County from causes associated with childbirth. Three of these were among the 459 mothers who had maternity care from the demonstration health department nurses; 24 were among the 1,583 who did not. What this means in the form of death rates per 1,000 births is shown in *Chart 8*: for white and colored mothers together the rate in the group under care is less than half that in the group not under care; and, as would be expected from the facts already set forth, the greatest gain is registered among colored mothers, where the rate under care is less than a third of the rate not under care. The stillbirth rates show a similarly favorable situation in the group under care.

The babies also made a favorable showing. There were only 15 deaths of babies less than one month old in 445 cases where prenatal care was given, and 68 deaths in the remaining 1,472 cases. The rate for the group under care is a fourth less than the rate for the group not under care. Here, too, the advantage is found on both sides of the color line, though the best showing is in the case of the colored babies.

It may be, of course, that this apparent saving of life is due quite as much to other causes as it is to the fact that some mothers had maternity care and some did not. Natu-

rally it is impossible to prove a clear-cut case, for many factors enter into the situation and the figures are small

MATERNAL AND INFANT MORTALITY IN CASES UNDER AND NOT UNDER PRÉNATAL CARE BY HEALTH DEPARTMENT NURSES, 1925-1928

	TOTAL		WHITE		COLORED	
	<i>Under care</i>	<i>Not under care</i>	<i>Under care</i>	<i>Not under care</i>	<i>Under care</i>	<i>Not under care</i>
<i>Maternal deaths</i>						
Number of births . . .	459	1,583	207	955	252	628
Number of deaths . . .	3	24	1	6	2	18
Mortality rate per 1,000 births	6.5	15.2	4.8	6.3	7.9	28.6
<i>Stillbirths</i>						
Number of births . . .	459	1,583	207	955	252	628
Number of stillbirths . .	14	111	2	42	12	69
Stillbirth rate per 1,000 births	30.4	70.1	9.7	44.0	47.6	109.6
<i>Infants under one month of age</i>						
Number of live births . .	445	1,472	205	913	240	559
Number of deaths . . .	15	68	6	29	9	39
Mortality rate per 1,000 live births: Total . .	33.6	46.2	29.3	31.7	37.5	69.7
Syphilis	2.2	1.4	0.0	0.0	4.2	3.6
Respiratory diseases . .	0.0	1.4	0.0	0.0	0.0	3.6
Diarrhea and enteritis . .	2.2	1.4	0.0	0.0	4.2	3.6
Congenital causes . .	26.9	34.6	24.3	28.5	29.1	44.7
Unknown or ill-defined . .	0.0	4.1	0.0	1.1	0.0	8.9
Other causes	2.2	3.4	4.9	2.2	0.0	5.4

enough to be affected by chance variations. But at least it is pretty clear that the families under care did not have, as a group, such advantages in economic security and intelligence that their mothers and children would in any case have made a better showing.

It seems reasonable, therefore, to draw the conclusion that the nurse's visits and the clinical and hygienic care which she stimulated were actually of value to the mother—

that they gave her a better chance of surviving childbirth herself, that they tended to decrease the proportion of stillbirths, and that they gave the baby a firmer hold on life during its first month.

Midwife Training

An important element in bettering the lot of women at childbirth was the improvement of standards among the Negro midwives. Since it was impossible to eliminate the midwives from their well-intrenched position, it was decided to give them such training as they could absorb and to keep their work under supervision by the nurses. Through the interest of the health officer and the local physicians, a course of ten lectures was outlined in 1925 and forty-five midwives were registered for it. Teaching was done by the health officer, by a local physician, and by the nurses. Emphasis was laid first of all on cleanliness—"The fust thing I does is washes my hands"—and then on the importance of calling a physician when certain difficulties made their appearance. The lectures covered simply the essentials of preparation for delivery, delivery, and the after-care of mother and child, with every step demonstrated so far as possible and repeated over and over until each member of the class could do it creditably herself. At the end of the first set of lessons, eleven women had attended all ten sessions and six had qualified for certificates by attending at least six lessons, purchasing a properly equipped midwife bag, presenting it for approval in a clean and orderly condition, and performing one delivery creditably under supervision of the nursing director.

In 1926 a new state law, passed at the instance of the Clarke County Medical Society, required midwives to secure a certificate from the health officer before they could legally practice. With this legal support, the brief training courses

were repeated in 1926 and 1927. Twelve women were certified in 1927. The midwife students received their certificates at the graduation exercises of the high school and of a class in practical nursing conducted by a colored physician. Many of the active midwives attended year after year, partly to keep in touch with what was taught, partly because they enjoyed the friendly society of their own group. A midwife organization helped to maintain *esprit de corps* and to uphold the standards of good practice. The midwives decided to wear white uniforms on duty. The nurses in the field watched their work so far as they could, saw to it that they came in regularly for supplies of silver nitrate and sterile cord dressings and that they registered the births which they attended. The midwives were required to take a physical examination each year, and the younger ones, if they were found to be syphilitic, were treated free. The nurses also visited these women in their homes and encouraged them to keep their own houses clean, to grow leafy vegetables in their gardens, and in other ways to set the example of good health habits to their neighbors and clients.

The number of midwives in active practice apparently decreased. While some who were old and who lived in the remoter parts of the county were not reached by the yearly courses, the women who handled the greater part of the work were perceptibly influenced by training. It was impossible to enforce the state law against those who worked occasionally and informally, but the positive leadership of the nurses was more effective than legal pressure. In 1927, the only year for which the figure is available, midwives who had had some training attended three-quarters of the births registered as midwife cases. The cost of the bag was something of a deterrent to those who wished to secure certificates, and progress was slow when every lesson had to

be learned and relearned many times, but there is no doubt that the midwives who came into contact with the training course helped to reinforce the health program. They accompanied their patients to the clinic, they brought mothers and children to the health centers, they preached audibly and fervently the gospel of doing what the doctor and the nurse directed.

At the close of the demonstration a room in the City Hall was set aside as a permanent meeting place and health center for the midwives and their patients. For the annual course of lessons it was planned to substitute a series of four conferences, supplemented by monthly visits of the midwives to the health center for inspection of their bags. The organization and the genuine professional pride of the group gave promise of continuing indefinitely.

CHAPTER VII

A MEASURE OF PROGRESS

The formal appraisal of public health performance in Clarke County for each year from 1923 to 1928 shows that the general rating of county health work, according to the Rural Appraisal Form of the American Public Health Association, increased by 168 per cent—from 331 points to 889 out of a possible 1,000. This chapter is written by Dr. W. F. Walker, field secretary of the Association.

THE total rating of public health activities in Clarke County, as measured by the Appraisal Form of the American Public Health Association, increased nearly threefold from 1923 to 1928—from 331 points to 889 (the possible maximum being 1,000 points). Increased staff and intensive education resulted in measurable and valuable changes during this period. The recording and analysis of vital statistics were brought up to standard. Communicable disease control was made an effective service. A fairly satisfactory program for venereal disease control was established. Tuberculosis control was strengthened both through institutional care of the active case and through preventive measures. Clinical and instructive services for prenatal hygiene were established. Services for preschool children were materially increased. Health examinations and physical education were developed in the schools. A laboratory service of high quality, rendering diagnostic service to physicians and functioning in the sanitary control of food and milk supplies, was built up.

The trend in the total score for public health performance is shown in *Chart 9*. The results in the reduction of morbidity and mortality, particularly among mothers and children and from certain specific causes, speak for the quality and soundness of the program. Many methods of work and details of health service were developed which were of value not only in the local program but also elsewhere.

Vital Statistics

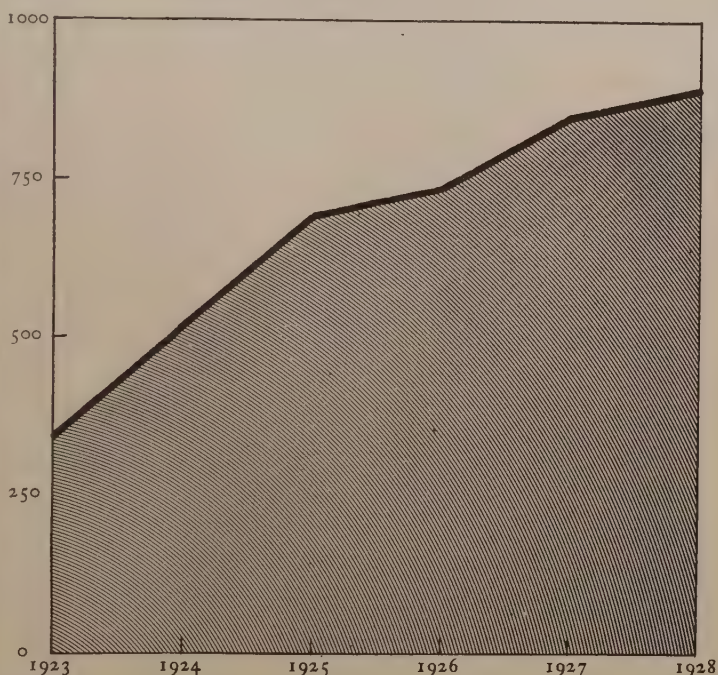
In 1923 birth and death reports, the basis of vital statistics, were filed with the city clerk. The secretary of the city Board of Health kept a chronological index of births and deaths occurring in Athens. Certain summaries of data for the county, especially those related to what was being done locally in communicable disease control, were prepared

currently for the use of the county health commissioner. No detailed tabulations of the material filed, in accordance with the International Classification of the Causes of Death, were made. The certificates were not adequately checked for accuracy or completeness, and the service scored but 29 of the possible 60 points, on the basis of the Appraisal Form for Rural Health Work.

Chart 9

TOTAL SCORE OF PUBLIC HEALTH ACTIVITIES IN
CLARKE COUNTY

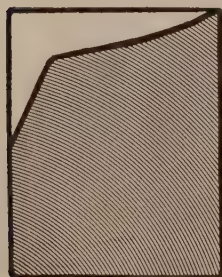
POSSIBLE MAXIMUM 1000 POINTS
AS RATED ON THE APPRAISAL FORM OF THE
AMERICAN PUBLIC HEALTH ASSOCIATION



In 1924 steps were taken to improve the reporting, checking, analysis, and use of vital statistics. All deaths from communicable diseases were checked against reported cases in order to stimulate the reporting of communicable diseases throughout the county. Deaths of infants and stillbirths were checked against birth reports to bring this service to its highest possible efficiency. Complete alphabetical card index records of both births and deaths, running back to the institution of birth and death registration under the state in 1919, were established as a working procedure. Analyses and tabulation of important data were made in accordance with standard procedure and the statistical trends charted currently for the information of the health department and the demonstration. The outstanding statistical material was written into an interesting and effective annual report which was widely distributed in the local community and elsewhere.

In the five-year period the vital statistics service has been improved:

1. By increasing the percentage of births registered until registration was well over 90 per cent.
2. By providing careful check and verification of reported facts on both birth and death certificates.
3. By extending the classification and tabulation of birth and death statistics so that these furnished useful guides for the development of health work in the community.



SCORE FOR VITAL STATISTICS

Maximum score allowed in the Appraisal Form for vital statistics, 60 points out of a total of 1,000.

Clarke County score, 1923.....	29
Clarke County score, 1928.....	60

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.

4. By reporting and interpreting these statistical facts periodically to the community.

This improvement in service was reflected in an increase from a score of 29 points in 1923 to 60 in 1928—the maximum score for this field of work. It is important that these activities, once started, be continued without diminution, as the full value of statistical information can be realized only when a thoroughly sound background is available for comparison. This can be obtained only by having statistical material collected for a period of years on a uniform basis.

Communicable Disease Control

In the case of certain diseases, notably typhoid fever, diphtheria, and smallpox, communicable disease control in Athens and Clarke County had begun to function effectively before 1924. The compulsory vaccination of school children existed in Athens many years ago. The mortality from diphtheria and typhoid fever declined sharply in the years 1922 and 1923 respectively. Studies of communicable diseases were necessarily limited to the causes which were then more important, typhoid fever in particular, and records for other diseases were somewhat incomplete. The health department devoted a considerable amount of time and money in these early years to disinfection, a practice later abandoned as ineffective. Though some communicable disease nursing had previously been done, instructive nursing service in this field was lacking in 1923. Other control practices, such as the culturing of diphtheria cases before release, the vaccination of smallpox contacts, the quarantine of scarlet fever cases, and the like, were carried out in conformity with standard practice with the exception that typhoid fever cases were released from observation without the precautionary measure of culturing; this was not required by city ordinance until 1924. The vaccination pro-

gram for smallpox and typhoid fever had been well begun. Plans for a toxin-antitoxin program for diphtheria had been initiated, but only a few doses had been administered so that an effective percentage of the susceptible population had not yet been protected.

The campaign against typhoid fever, begun before 1924, has been continued in the past five years, and the control of other diseases has been advanced. A closer supervision of typhoid fever cases, including the culturing of all convalescents before being released from observation, has been made the practice. Approved epidemiological histories have been routinely kept for every important communicable disease, and an analysis of the cases and deaths by time and place, with graphic charts, has been made.

The introduction of an adequate nursing service was a step of fundamental importance. Until late in 1926, nursing supervision of communicable disease cases, including instruction of the mother or caretaker as to the protection of the family and the case, was supplementary to the supervision of quarantine by the inspectors; bedside care was provided where necessary. In 1927 the nurses completely replaced the inspectors in the supervision of communicable disease, except in those few cases where it was necessary to exercise the police power of the health department.

The immunization program for smallpox and typhoid fever has been continued at an effective level. In combating typhoid, emphasis has been put on the improvement of wells and privies in the rural parts of the county, with immunization on a moderate scale. The city schools have continued to require vaccination against smallpox; colored children in the rural schools have been routinely vaccinated by the health officer; and the vaccination of white children in the country schools, as well as their immunization against diphtheria, has been stimulated by the blue ribbon campaign.



THE MEDICAL EXAMINATION OF CHILDREN ABOUT TO ENTER SCHOOL WAS STRONGLY SUPPORTED BY THE PARENT-TEACHER ASSOCIATIONS. IN 1928, 96 PER CENT OF THESE CHILDREN WERE SEEN



THE HEALTH OFFICER IMMUNIZED SCHOOL CHILDREN
AGAINST SMALLPOX, DIPHTHERIA, AND WHEN
NECESSARY, TYPHOID FEVER—AN ESSENTIAL STEP
IN THE EFFORT TO CONTROL THESE DISEASES

The rapid shift of population in the rural school districts has made it difficult to establish adequate protection; one two-room school which was vaccinated completely in December was found in January to have twenty-five per cent of unvaccinated children. Immunization against diphtheria has been extended through the schools, both school and preschool children being invited to the clinics at which free inoculation is given. The demonstration physician advised toxin-antitoxin treatment in his conferences with mothers at health centers and schools.

A special investigation in the spring of 1928 indicated that 43 per cent of all the children in the county between one and ten years of age were apparently protected against diphtheria¹; that 65 per cent of the city school children and 55 per cent of the rural school children were immune. In the city schools 85 per cent of the children were protected against smallpox, in the rural schools 67 per cent.

The effect of this program of communicable disease control is reflected in the death rates from typhoid fever and diphtheria. In the three earlier years for which information is available—1921–1923—the average number of deaths per year from typhoid fever was 7.7 as compared with 1.6 in the past five years; the average of deaths per year from diphtheria decreased from 8.3 to 1.4. The soundness and the effectiveness of this program is shown by these marked reductions and the continuance of low average rates for these diseases. The table on the next page shows the incidence of six epidemic diseases.

Experience with regard to measles is of particular interest. The only deaths since 1920 occurred in 1923–1924, when they totaled twelve. Judging by experience elsewhere, which indicates the probability of a high incidence about once in three years, many cases might well have been expected in

¹ Complete toxin-antitoxin or negative Schick.

INCIDENCE OF CERTAIN COMMUNICABLE DISEASES
CLARKE COUNTY, 1921-1928

	TYPHOID		DIPHTHERIA		SMALLPOX	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
1921	117	13	8	4	38	0
1922	36	5	93	16	8	0
1923	24	5	31	5	3	0
1924	26	2	32	2	72	1
1925	17	1	11	1	2	0
1926	14	2	66	0	43	1
1927	8	2	51	1	54	1
1928	7	1	21	3	0	0

	SCARLET FEVER		MEASLES		WHOOPIING COUGH	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
1921	4	0	2	0	15	2
1922	9	0	0	0	15	0
1923	10	1	502	4	8	2
1924	17	0	120	8	53	3
1925	5	0	2	0	78	1
1926	16	1	13	0	48	1
1927	18	0	6	0	33	4
1928	42	0	81	0	39	2

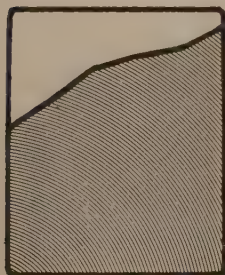
1926 or 1927. Early in 1928, students returning to the university after Christmas vacation brought active measles infection in many cases. At the same time measles was imported into local families by individual members coming in contact with cases in other parts of Georgia and in other states. To a large degree the nursing efforts of the health department for the early months of the year were directed toward this disease, with an average of over three visits per case reported and many more in the tracing of contacts. At the appearance of the first symptom the nurse called attention of the patient or the parents to the possibility of measles. In no reported instance did the disease spread from the initial case beyond the first group of contacts: that is, A passed the infection to B, but B did not pass it to C. Though 81 cases were reported, no deaths occurred, and

proof seems to have been added to the growing belief that a particular measles epidemic recognized at its beginning and forcibly dealt with can, in a measure, be controlled, and that through good care and prolonged convalescence, deaths and damaging sequelae, to a considerable degree, can be prevented.

When the deaths of children from communicable diseases during the pre-demonstration years, 1920-1923, are compared with those during 1924-1928, a marked gain is shown. During the earlier period of four years 51 children under fifteen years of age died from communicable diseases, an average of 12.8 per year; during the past five years 31 children of like age died from like causes, an average of 6.2 per year. The average annual deaths have been cut in half. The table on page 16 shows that this gain applies to both white and colored children.

The past five years have shown an increase of 66 per cent in the score of communicable disease control. The community has received better service in the following ways:

1. Through increased cooperation of private physicians with the health department, the reporting of acute communicable diseases has been improved.
2. A sound, satisfactory, and effective system of epidemiological studies has been established.
3. Professional attention to communicable disease cases, from physicians and nurses of the health department, has increased fourfold.



COMMUNICABLE DISEASE CONTROL

Maximum score allowed in the Appraisal Form for control of communicable diseases, 175 points out of a total of 1,000.

Clarke County score, 1923.....	97
Clarke County score, 1928.....	161

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.

4. Hospitalization has been arranged for those cases unsuited for home care.

5. The immunization of children against smallpox, diphtheria, and typhoid fever, already under way in 1923, has been carried on aggressively until a sufficient number of the school children and preschool children have been protected to act as a substantial barrier against these diseases.

Communicable disease control is a service in which it is necessary to be always prepared. The items of the program which should continue without check are:

1. Epidemiological studies and case histories.

2. The instructive visiting by trained public health nurses of all cases cared for in the home.

3. The continuation of the immunization program, with the major emphasis upon smallpox, typhoid, and diphtheria. In the latter disease, with the high percentage of school children already immunized, emphasis can be now placed upon the protection of preschool children, with just enough attention to school children to protect the incoming group.

Venereal Disease Control

The beginning of the demonstration found practically nothing being done in an organized way to control venereal infections in Athens and Clarke County. A few cases were reported quite incidentally from various sources. Little clinical service was available and no attempt was made, by supplying arsenicals or other drugs on request, to encourage the treatment of indigent cases by private physicians. The only records of activity in 1923 were a few incidental reports made to the health department.

No change was made in this activity, except slight increase in reporting, until a special clinic was established at the Athens General Hospital in 1926. The beginning of this service for the treatment of infections in indigents and in children was an important step in promoting health, and the number of cases reported was considerably increased.

The success of the clinic in securing attendance was dependent to a large degree upon the activities of the public health nurses, who were responsible in many instances for bringing in contacts from the families of known cases for examination and continued treatment (the school and health center examinations revealed a number of suspicious cases, particularly among colored children of early ages) and for the follow-up of adult and child cases in the clinic to insure completion of treatment.

In 1927 the laboratory service was extended to include the Kahn test for the diagnosis of syphilis, which has since been made available for both clinic and private physicians' cases and has proven popular and helpful. From 1921 to 1926 the largest number of cases of venereal disease reported to the health department was never greater than 51 in any year; 153 cases were on record in 1927 and 150 in 1928. Visits at the venereal disease clinic at the hospital rose from 168 in 1926 to 945 in 1928.

Though there has been a remarkable increase in the score of the venereal disease services, much remains to be done in this field. The standards in the Appraisal Form are based upon country-wide averages, but in communities like Athens, with a large colored population, the incidence is likely to be above the average. The treatment of syphilis among school children in the colored schools is a difficult problem since the children are poor and both the schools and the homes are at such a distance from the hospital that transportation to the clinic must, in practically all cases, be provided. It seems apparent, also, that local physicians treating venereal infections have not made free use of the service which the health department might render in the follow-up of delinquent cases or in the home instruction of cases under treatment.

Without adequate treatment for cases of the venereal

diseases, which without this public health service would be likely to go untreated or to be treated inadequately, the community would not only run the risk of contagious infections but would be likely to reap a harvest of tremendous waste and economic loss. If the service is to be continued and expanded, the public must realize what these infections cost the community in sickness, dependency, and death.

The increased score reflects:

1. A change of attitude toward the reporting of this disease and a reporting rate which makes a good showing in comparison with other communities, even when the large colored population is considered.
2. The inauguration of a clinic service for the treatment of indigent cases and children which is tied closely to the local practice of medicine through the general hospital.
3. A follow-up service through the health department which serves to discover cases, active or suspicious, among the contacts of clinic patients and to insure the continuation of treatment to a successful conclusion.

The increased interest of physicians and particularly the clinician indicates that this program is likely to continue, but it cannot succeed without field service such as the nurses gave during the demonstration. Since continued urging is necessary, with this group, to keep cases under medical attention, there must be adequate follow-up if the reporting and clinical services are to maintain their present high level.



VENEREAL DISEASE CONTROL

Maximum score allowed in the Appraisal Form for venereal disease control, 50 points out of a total of 1,000.

Clarke County score, 1923.....	2
Clarke County score, 1928.....	50

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.

Tuberculosis Control

During the years 1921 and 1922, in Clarke County, more than three deaths from tuberculosis were reported for every case which had been reported before death—a sufficient indication of the importance which was attached to the disease as a public health problem by those responsible for reporting it. Organized community effort to deal effectively with it was begun in 1923, when, after some preliminary encouragement from the health officer, the Clarke County Tuberculosis Association was formed, raised a small budget, and employed a nurse on full time. Early in 1924 some slight clinical service was offered at the Athens General Hospital by local physicians and the health officer, with the nurse in charge of follow-up work. Little help was given by the physicians in finding cases, and the nurse was burdened with social service for several hundred tuberculosis veterans quartered at the university. From this meager but sound beginning there was developed a service which in most respects was well linked up with the demands of the community and which, though it had by no means reached perfection in 1928, did show such signs of healthy growth that one could look forward to the eventual attainment of satisfactory standards.

For hospitalization, in 1923, the community was entirely dependent upon the inadequate facilities then offered by the state hospital at Alto, of which little use was made by Clarke County. In 1924 the Tuberculosis Association asked the demonstration for help, and Alice M. Hill, of the staff of the National Tuberculosis Association, was accordingly brought to Athens for a case-finding study. As a result the total of reported cases rose from 36 in 1923 to 110 in 1924, and the dimensions of the local problem were clearly defined. Since the need for more available hospital beds was thus confirmed, the Tuberculosis Association sponsored a campaign for a

county sanatorium which, with thirty-bed capacity, was opened in 1926. Though hampered by inadequate financial support, this sanatorium served to improve the general community attitude toward hospitalization for tuberculosis, and with the increased facilities provided at Alto in 1927 beds became available for the hospitalization of diagnosed cases in the early stages for white and colored patients of all ages. Meanwhile the nursing service was coordinated with other health activities in such a way that it occupied its proper relation to case-finding, hospitalization, and the supervision of discharged cases and contacts.

Special efforts for prevention, through building up children who were physically below par, began in 1927 when 32 school children who were persistently underweight were systematically cared for in the summer months. This was followed during the school year by the provision of extra food at school and at home for these and other underweight children and by some adjustment of school periods to meet their physical condition. Cots were provided and a rest period arranged in order that the summer's gains in weight and physical fitness might not be lost. The school board furnished milk for these children and so released the funds of the Tuberculosis Association and the churches to buy milk for infants and preschool children where necessary.

This informal project developed in 1928 into more formal care for the same type of children at a summer camp. The Tuberculosis Association, with the aid of the alumnae of the Athens General Hospital School of Nursing, the health department, and other interested groups and individuals in the community, cared for a total of 24 children for a five weeks' period at a camp made available by the Young Women's Christian Association.

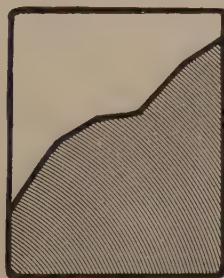
As might be expected, the lack of formal organization and central responsibility prevented the first year's results from

being as good as those often shown through similar care elsewhere. All but four of the children who attended the camp, however, showed increase in weight, and reports from nurses and teachers during the fall and winter indicated that they continued to improve after returning home. It is not surprising that some homesick children failed to stay the full period. The community should not be discouraged by these difficulties of administration or by results which do not yet measure up to the attainment of camps of longer standing.

Similar beginnings of preventive service have frequently been made in other communities, and, however simple, have proved most helpful in directing community attention to the importance of this age-group in the fight against tuberculosis. As forerunners of more refined and carefully controlled activities, they serve a very useful purpose. It is well recognized that the successful treatment of early or potential cases of tuberculosis in the early years by preventoria, open-air classrooms, and summer camps cost much less than treatment of active cases in later years.

The mortality statistics for Clarke County since 1921² show a gradual upward trend of tuberculosis deaths and death rate, due in part to better reporting. It is too soon after the initiation of the program to expect any material

² See Table 4, page 153.



TUBERCULOSIS CONTROL

Maximum score allowed in the Appraisal Form for tuberculosis control, 100 points out of a total of 1,000.

Clarke County score, 1923.....	24
Clarke County score, 1928.....	91

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.

reduction. The tuberculosis situation may be summed up as follows:

1. Clarke County, dependent five years ago on a state institution which was practically unused by county patients, now has the benefit of a local sanatorium well equipped to handle the problem among white people and of a sufficient increase in state facilities to care for colored cases.

2. The preventive program has developed from nothing at all to the beginnings of open-air and camp service. The camp should be made permanent, and the open-air project should become a part of the regular school program.

3. Clinical service has shown a marked growth but has fluctuated under the influence of nursing and hospital changes. This should obviously be stabilized and incorporated in the hospital out-patient department, as it is an important case-finding facility without which a community tuberculosis program cannot be successful.

4. The field nursing service, which was of satisfactory size and quality in 1927 and 1928, requires attention and support, since the success of the clinic depends to a large extent upon the field work of the nurses.

With these activities carried on, undoubtedly case reporting, which has shown a substantial improvement during the past five years, will automatically be stimulated. The present program should be continued until it has made a definite impression on the prevalence of tuberculosis. No satisfactory and sufficient financial arrangement has been made to continue services of proven worth, and the Tuberculosis Association must plan to continue its educational activities until the official agents of the community realize their responsibility in this direction.

Prenatal Hygiene

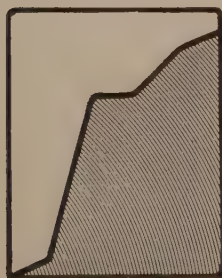
Though a small amount of nursing service had been available for the instruction of expectant mothers in 1921 and 1922 and the health officer had given some time to an educational clinic for them, the pressure of other parts of the

public health program made it necessary to drop all organized effort in this direction in 1923, so that very few mothers were receiving advice or help in pregnancy when the demonstration began.

Recognizing the importance of this phase of public health activities, and the high maternal, neonatal, and stillbirth rates that prevailed in the community, the demonstration early planned and put into operation a definite and comprehensive program for the improvement of the conditions surrounding maternity.

The central feature of this service, which is more fully described in Chapter VI, was home nursing service to expectant mothers as early in pregnancy as they could be reached, carrying the case through periodical visiting up to confinement and giving actual nursing care during the postnatal period. Medical supervision was obtained in two ways: through private physicians, at the continued insistence of the nurse that the mother select and consult her physician at an early date in pregnancy; and through a clinic established at the hospital for those cases who planned to be delivered by a midwife, or who were definitely indigent.

The effect of this care on the group of mothers which it served is astounding, as is shown by the comparative mortality and stillbirth rates cited on page 99. Such results, conforming to the experience of well-planned and soundly



SCORE FOR PRENATAL SERVICE

Maximum score allowed in the Appraisal Form for prenatal service, 75 points out of a total of 1,000.

Clarke County score, 1923.....	0
Clarke County score, 1928.....	69

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.

administered prenatal service in other communities, prove the economic worth of this work beyond the shadow of a doubt.

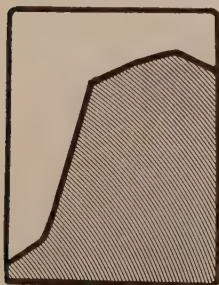
Since 1923, then, the community has profited by:

1. A nursing service reaching 22 per cent of the mothers during pregnancy and giving them the benefit of approximately five nursing visits during the period.
2. A medical service by clinic and private physicians carried on in conjunction with a medical service of an advisory and educational nature reaching the same group of mothers.
3. A careful supervision of the methods and practices of the midwives governing delivery service to 24 per cent of the mothers of the community, and an increased and improved obstetrical service in the hospital.

It is well recognized among public health workers that it is difficult to make effective the services which are offered for maternal and prenatal hygiene. It is important, therefore, to hold the ground already gained and to extend the percentage of population served by the nurses, in order that the maternal mortality and stillbirth rates may be further reduced.

Infant and Preschool Hygiene

The health department was thoroughly conscious in 1923 of the need and value of health service to infants and pre-



SCORE FOR INFANT HYGIENE

Maximum score allowed in the Appraisal Form for infant hygiene, 75 points out of a total of 1,000.

Clarke County score, 1923.....	4
Clarke County score, 1928.....	59

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.



"THE FUST THING I DO IS WASHES MY HANDS"
SAID A MIDWIFE AT ONE OF THE TRAINING CLASSES
CONDUCTED BY THE HEALTH OFFICER AND NURSES



PREACHER AND MIDWIFE WERE ALLIES OF THIS HEALTH CENTER HELD IN A NEGRO CHURCH. THE BABIES WERE ENROLLED IN A "SUNSHINE CLUB" TO ENCOURAGE REGULAR HEALTH SUPERVISION

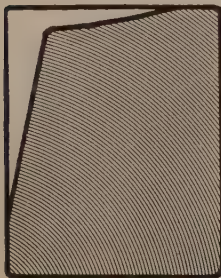
school children, but was so handicapped by lack of funds that the limited staff was unable to get effective results.

In 1924, an intensive educational program, including medical conferences with nursing follow-up, was inaugurated. This is described in some detail in Chapter V.

The interest of the Agricultural College in the formal training of young children led to its establishment of a nursery school in 1928. This school should be of service to Athens in several ways: directly through the children received and through their parents, to whom it gives a better insight into child training; and indirectly through the contact of local teachers with the school.

In the further development of the infant and preschool service, group conferences led by the nurses should be initiated. Much of the benefit derived from home visiting by the nurse can be secured through group instruction, which would reduce considerably the time spent in going from home to home. In the organization of such conferences the interest of mothers or lay workers should be aroused so that the responsibility for attendance will be borne by some one other than the nurses themselves, since frequently as much time is spent in persuading people to come to the conferences as would be required to give service in the home. Voluntary assistance to this end has been effective in other communities.

Special problem cases should be referred to private physi-



SCORE FOR PRESCHOOL HYGIENE

Maximum score allowed in the Appraisal Form for preschool hygiene, 50 points out of a total of 1,000.

Clarke County score, 1923.....	10
Clarke County score, 1928.....	50

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.

cians or to special medical conferences at the hospital. Among the objectives set up for the nursing and medical services for infants particularly should be the protection of every baby against diphtheria and smallpox by the time of its first birthday. The child study courses should serve as a means of arousing and continuing interest of mothers in this important field. The nursery school should furnish specific help to certain children, and the staff of the school would naturally be called upon to participate in a very active way in the education of mothers regarding child care and guidance.

The trend of scores for infant and preschool services in Clarke County is shown separately in the charts.

School Hygiene

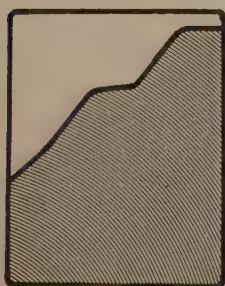
The school health program in Clarke County was already relatively advanced in 1923, but it was hampered by inadequate nursing personnel, the lack of active interest among teachers, and the absence of a clear understanding of the value of school health service on the part of the community. Few physical defects were corrected. School buildings were routinely inspected to determine their sanitary condition, and an active program had been initiated for the installation of sanitary toilets on school premises. The other important sanitary facilities, such as hand basins, safe water supplies, individual drinking cups, and bubbling fountains, were conspicuous by their absence. Health education in the schools was limited to formal teaching of health and hygiene from textbooks, with little attempt to relate the teaching to the actual daily experience of the child. Even this service was incomplete. The physical education program consisted of formal exercises and was not a regular procedure for all schools and grades.

On this foundation, however, a sound program of school health work was soon built, and progress toward a very effective and reasonably complete service was rapid. The program is described in Chapter IV. It has resulted in:

1. A definite improvement in the physical examination of school children, with the findings interpreted to child, parent, and teacher.
2. The correction of the major portion of the physical defects found.
3. The development of instructive nursing visits covering all schools and reaching 20 per cent of the school population.
4. Improvement in sanitary conditions in urban and rural schools—a marked improvement in urban and a good beginning in rural schools.
5. A definite working program of health and physical education based on the leadership of the teacher.

The flattening out of the progress curve in the last two years indicates that it has reached the limit of attainment under the physical handicaps existing in the county. Until there are better school buildings, particularly in the rural parts of the county and for colored children, and until there is a more general appreciation of the importance of health education and of all education for the colored group, the program cannot rise materially above its present level.

If this service is to be developed, the schools (both teachers and school organizations such as the Parent-Teacher



SCORE FOR SCHOOL HYGIENE

Maximum score allowed in the Appraisal Form for school hygiene, 150 points out of a total of 1,000.

Clarke County score, 1923.....	59
Clarke County score, 1928.....	140

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.

Association) should assume further responsibility for follow-up to secure the correction of physical defects. The nurse should work with groups of mothers, teachers, and children, rather than through individual home visits for this purpose. The medical examination should be continued in its present form for entering children and at definite periods in the school career. Health education in the rural schools, particularly the colored schools, must keep pace with the educational development of this group. General attention should be given to the water supply of rural schools and to the sanitary condition of all colored schools.

Sanitation

In 1923 the sanitary program emphasized the construction of sanitary privies and the inspection of the abattoir in the city of Athens. Some work on the construction of sanitary privies had been carried on in other parts of the county. But not much else had been done in the field of sanitation; and there was little control of the production and distribution of milk. No effort was made to see that food handlers or dairymen were free from disease. Athens possessed a safe and adequate water supply, but it was available only to about 75 per cent of the people. Its sewer system served an even smaller group, possibly 60 per cent.

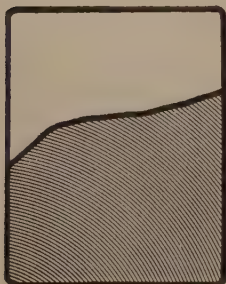
The sanitary program has shown relatively less development in the last five years than any other activity. This is unquestionably due to the physical difficulties of extending water and sewerage facilities in the city and of securing the improvement of rural sanitation generally. The sanitary inspection service was well established before 1924; the activities for control and use of a safe water supply and sanitary disposal of sewage have remained constant; control of food and milk has been accomplished largely during the past five years. Progress has been made in such items as:

1. The supervision of food handlers.
2. The inspection of food-handling establishments.
3. The inspection of the meat supply.
4. A new milk ordinance providing for the complete and adequate control of milk production. The installation of pasteurizing equipment by one dealer paves the way to the ultimate protection of the urban supply through this means.
5. The tuberculin testing of dairy cows in the county, which has been completed and put on a continuing basis.
6. The laboratory control of raw, prepasteurized and pasteurized milk.

The sanitary inspector should pay particular regard to the construction of new toilets and the maintenance of those in existence. Ordinary nuisances and routine sanitary inspections should be reduced to a minimum. Further improvement in the milk supply may still be brought about through continued education of producers and consumers as to the advantage of clean milk. Rural sanitation should be bettered as far as this is possible under existing economic conditions.

Laboratory

Laboratory examinations were among the first services to be developed by the Athens Board of Health. Even before the coming of the full-time health officer some public health laboratory work had been done under its direction in space



SCORE FOR SANITATION

Maximum score allowed in the Appraisal Form for sanitation, 175 points out of a total of 1,000.

Clarke County score, 1923..... 75
Clarke County score, 1928..... 122

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.

provided at the university. By 1923 the laboratory had been moved to the office of the city Board of Health. The sanitary service consisted of regular testing of the city water supply, with only incidental tests of other water and milk. The diagnostic service included chiefly diphtheria and tuberculosis and some occasional examinations for other conditions such as intestinal parasites. Much of the equipment usually considered necessary for a modern laboratory was either missing or out-of-date.

Since 1924 the Board of Health has had a full-time bacteriologist. With the assistance of the demonstration, modern equipment has been provided so that the laboratory is prepared to do all examinations usually made in a public health laboratory. It is now an asset in the control of all communicable diseases in which chemical or microscopic tests are needed in diagnosis or in determining the stage at which it is safe to release a patient from quarantine; examinations for such purposes increased from 965 in 1924 to 2,255 in 1928. In 1927 the laboratory was equipped to make blood tests for syphilis. It has remained—as always—an essential aid in safeguarding the purity of the city water supply, and it plays an increasing part in the control of milk supplies; examinations of this type rose from 346 in 1924 to 754 in 1928, and under the new milk ordinance regular and



SCORE FOR LABORATORY

Maximum score allowed in the Appraisal Form for the laboratory, 70 points out of a total of 1,000.

Clarke County score, 1923.....	15
Clarke County score, 1928.....	67

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.

frequent bacterial and chemical tests are now made of all milk sold in the city.

The quality and quantity of service given by the laboratory has reached a high standard. In those tests in which it falls short of the appraisal quota the failure is due to a deficiency of specimens. An effort should be made to stimulate the use of the laboratory by the physicians, particularly for the early diagnosis of tuberculosis, syphilis, and gonorrhea.

Popular Health Instruction

This activity was already well begun in 1923. The movement to establish the full-time local health unit had involved much educational effort and newspaper health publicity. The distribution of educational bulletins, and public health lectures, were already well established. During the past five years a more intensive effort has been made in this field, and some special features with a popular appeal, such as exhibits, May Day activities, booths at the fair, and the like have been arranged.

A notable advance has been the preparation and distribution of a comprehensive yet direct and interesting annual report, which acquaints the community with the outstanding facts of local health problems and the efforts to solve them.

Though the score for this service has increased by 20



SCORE FOR HEALTH INSTRUCTION

Maximum score allowed in the Appraisal Form for health instruction, 20 points out of a total of 1,000.

Clarke County score, 1923.....	16
Clarke County score, 1928.....	20

CLARKE COUNTY'S YEARLY PROGRESS FROM 1923 TO 1928 IS SHOWN AT THE LEFT.

per cent and now stands at a maximum, the educational influence of the entire health program is hard to measure: most of its benefits have been felt by the inarticulate sections of the community. The measurable gains in infant and maternal death rates and communicable disease control are evidence that health teaching in the homes and schools has worked. Further gains might confidently be expected if the services under way in 1928 were continued and allowed to develop.

W. F. WALKER, D.P.H.

Field Secretary, American Public Health Association

CHAPTER VIII

PUBLIC ATTITUDES

Many families in good circumstances and many in the handicapped group were receptive and appreciative when the health staff offered them service. Community organizations were friendly, and many contributed directly, in money or volunteer work, to the extension of the health program.

ON TWO counts, health work from 1924 to 1928 was dependent upon the good will of Clarke County. The staff could offer health services, but unless the potential consumers of such services were at least receptive, they could accomplish nothing. The staff could demonstrate that health services were valuable, but unless the taxpayers and community leaders recognized their value and assumed a share in the health program, the community would not profit permanently by the demonstration.

To a large extent the consumers of health service and those who were responsible for adopting or rejecting it as a continuing element in the life of Clarke County were the same people. At some points the public health doctors and nurses could be more useful to the poor than to the well-to-do, but wherever they reinforced the health department or the schools with community-wide activities they were dealing with rich and poor alike. When the work was expanded in 1924, a majority of the families in comfortable circumstances had already become aware, through reading and observation or through personal experience, of the value of child health services for themselves as well as for their neighbors. A few were accustomed to think of such work as good for the poor but without significance for established citizens. Early in the demonstration one such father, who believed he was furnishing adequate health care for his daughter, a pupil in a private school, came to the office perplexed and not a little irritated. He held in his hand a notice that the child had a dental defect; since he had provided regular dental supervision for her almost from her birth he felt sure a mistake had been made and asked somewhat impatiently why time was spent on his daughter when there were so many children in greater need of it. He was asked whether his family dentist had agreed with the findings of the school examiner.

"Not yet," he answered. The next day, however, he came back with an apology. The dentist had found and repaired the cavity. He remarked that he was not only profoundly grateful for the examination, but that he realized for the first time the unexpected value of the program to all classes of the population. From that time on he was a strong advocate of demonstration activities. Skepticism gave place to appreciative understanding among many families of a similar sort. One mother summed up her feeling in private conversation by saying, "I feel so safe now when I send Dolly to school."

When the questionnaire on results of school health training was circulated in 1927,¹ comment from many families of this class indicated that the parents were convinced that the demonstration was producing a welcome change in children's health attitudes. The following quotations are typical:

I find this work to be a great help to me in the home. Children are clannish and glad to do what others are doing. We have always adhered to these health rules in a measure but the *regularity* of it is what counts and brings results.

Before far into the year last year I saw to it myself that Mary practised all of the desirable health principles I knew. However, as she got along in the health work in school I found that she became sufficiently interested in health to assume the responsibility herself for carrying out such principles. She has been intensely interested in the health work! . . . We appreciate, more than can be expressed in words, the health work in the schools.

Among the less fortunate white groups there was an indifference to the program which never wholly disappeared. This was true to some extent among the families of small tradesmen and mechanics, but the problem was most difficult among the millhands. For the most part, this group at first approach seemed to present a closed mind to health ideas. They had only one criterion of health: the ability

¹ See page 67.

to do the day's work at the looms. The traditional American incentive—to give their children a better chance than they had had—seemed to play little part among the adults of this group: morale, initiative, and ambition were alike drained away by generations of inferiority and economic handicap. To teach health to such families, in the face of indifference and want, was a task calling for infinite patience and a stoical disregard of apparent failure.

Only the nurse, who slowly won their confidence and built up some personal influence, was able to break down the barrier which shut these families away from the progressive health ideas which spread so much more easily in the favored groups. By sheer persistence, by blending tact and authority, and occasionally by enlisting the prestige of the mill management, the nurses did succeed here and there in bettering the health of mill children and their parents. Children at school, where cumulative health influences played upon them, the mothers of one neighborhood who had been organized into a Lend-a-Hand Club by a volunteer worker, and the mothers of sick children for whom the nurses gave bedside care, were accessible to health teaching. Mostly it was a matter of winning over one mother at a time; a nurse reported in a maternity case that "In spite of jests of family and neighbors, patient is loyal to new methods of child care."

A mother in a mill village outside the city sent word to the nurse at school that her child was very ill. The nurse, calling at the home, found a nine-year-old girl down with pneumonia. The doctor had seen her at four in the morning; at two in the afternoon she was still lying fully dressed in a bed with "almost black" sheets, tossing and crying in pain, with a high temperature. The windows were shut tight. The nurse's entry on her report—"Bed bath given and linen changed. Child asleep after nurse finished care"—tells its

own story. The nurse's eight visits to this child and the care which she gave under the direction of the sympathetic physician had perhaps something to do with the family's later effort to do something for the children's health—an effort which included renting a cow!

Enforcing quarantine was not easy in such families, but tactful teaching and an official attitude which relied on reasonableness rather than authority brought about a change for the better in this respect. Families once hostile came to accept the necessary regulations in good spirit. A nurse visiting a mill home quarantined for measles found a neighbor's child in the kitchen. She warned her and sent her home. A few days later, at a nearby house, she discovered on the door a homemade and crudely lettered sign—"Measles here." No case had been reported from that address, but she found on investigation that the little girl who had innocently broken quarantine and was now paying the cost had taken this step on her own initiative to warn away other children.

Such encouraging incidents were rare enough in the mill group to make a deep impression on the nurse's memory when they occurred. It took frequent urging to bring mothers out to health centers with their babies, and almost endless visits to change the habits of most families or to secure the correction of serious defects. Both in this group and among the Negroes the whole health structure rested so directly on the nurse that a change in nursing personnel often meant a long gap in effective service while the new worker was gradually winning the confidence and friendship of her community.

After five years' work among both millhands and Negroes most of the demonstration staff were of the opinion that the Negro was the more responsive of the two. At the start each new worker had to overcome the reserve and suspicion

with which the Negro habitually meets a white stranger. But colored leaders were friendly, and a representative committee which was called together in the first year of the demonstration did much to allay this suspicion. The Negro churches, also, were hospitable and proved a valuable channel of health teaching when the health officer began his campaign for rural sanitation and health supervision. Once the Negro was convinced of the friendliness of the health worker, his docility and desire for improvement were valuable assets in the health campaign. The genuinely professional spirit—simple though it was in its forms of expression—which the health department was able to awaken among the more active midwives was another factor in lengthening the reach of nurse and doctor, for in many cases they not only welcomed supervision for themselves but joined with unction in the teaching of good health practices among their patients.

Community Cooperation

To some extent, the good will of the groups which represented responsible elements of the community could be measured by their willingness to cooperate in specific ways in the projects sponsored by the health staff.

The parent-teacher associations, one at each white school, and their city-wide council were intimately concerned with the demonstration because of its direct bearing on the health of school children. Details of their cooperation have already been mentioned. They gave systematic volunteer assistance at the health centers and in the preschool round-up, aided in a special census of the city in 1926, helped to furnish the health centers, organized and helped to finance various projects for the correction of defects among poor children, gave demonstration workers a regular place on their programs for the discussion of health problems, and in general

acted as a nucleus around which public opinion in support of health progress might be built up.

The Red Cross, which was the only local organization for relief, and the Tuberculosis Association, which was the only lay group devoted entirely to health work, came into frequent contact with the work of the nurses. The latter, as has already been noted, soon entered into formal partnership with the demonstration. The Red Cross performed a valuable service in accepting responsibility for admissions to the out-patient department of the Athens General Hospital.

The luncheon clubs, the Chamber of Commerce, and other civic organizations showed a friendly interest in the health program and responded freely to requests for special assistance. The Rotary and Kiwanis Clubs furnished funds for the health cup which was offered for interschool competition in 1924, 1925, and 1926, and with the Lions Club contributed to milk funds and special loan funds for the correction of defects. Similar special gifts were made by the Order of the Eastern Star and by church and Sunday-school groups. The Rotary and Kiwanis Clubs appointed special committees to support the budget which was urged by the demonstration and the health officer in 1928 but were unable to influence official action.

Formal relations with the Medical Society have already been mentioned. For several years the society made the friendly gesture of electing the pediatrician employed by the demonstration as its secretary. It joined with the demonstration and the hospitals, also, in a physicians' institute in the spring of 1928, which aroused no small interest among the practitioners of Athens and nearby towns. Prenatal care, infant feeding, upper respiratory infections in childhood, diagnosis in tuberculosis, the venereal diseases, and cancer were discussed by visiting specialists in lectures or teaching clinics. In general the organized cooperation of the Medical

Society with the health workers was more conspicuous than the personal cooperation of its more conservative members. With the state and district dental societies relations were especially cordial and fruitful. The state health department was friendly but paid no close attention to the demonstration.²

Among the educational institutions in and about Athens the Agricultural College, through its departments of home economics and physical education, came most closely into working relations with the demonstration. The practice teaching done by both departments in one of the city schools and by the home economics department in a rural high school was a factor in strengthening the effort of the demonstration to build up sound technique in health teaching, and home economics students shared helpfully in special projects such as the effort to teach selected families better methods of choosing and preparing food, budgeting income, and house-keeping. The county agent employed by the department of agriculture during the later part of the demonstration gave effective help in the promotion of rural health centers. Aside from some lectures by the health educator and the physical educator, contact between the demonstration and the Georgia State Teachers College was limited to the routine services which were given to children in the practice school on the same basis as in the city schools. The Commonwealth Fund, however, financed the establishment of a chair of health education which the college continued to maintain at its own expense.

As a binding force in developing community relationships a general citizen group, representing all parts of the city,

² It may be noted in passing that members of the demonstration staff were frequently called upon for help in public health projects in Georgia outside Clarke County. For instance, the pediatrician, while he was president of the Georgia Pediatric Society, aided in organizing a state-wide campaign for diphtheria immunization.

was called together to form the Athens Child Health Demonstration Committee. At first this did much to popularize the program and to guide its development. Later it ceased to function so effectively: a general tension due to economic depression, business reverses, and the baffling problem presented by an unfriendly city administration tended to weaken its force as an organized body, though individual members continued to aid and advise the demonstration staff and to promote community understanding of its purposes.

CHAPTER IX

OFFICIAL ACTION

The City Council, the Athens Board of Education, and the Clarke County Commissioners authorized a gradual increase in health budgets to a peak in 1928, after which budgets were cut in a way which threatens the public health gains already achieved. The budget now stands, however, at nearly twice the pre-demonstration figure.

THE record of appropriations in Clarke County for the past ten years indicates that the responsible authorities have no consistent policy with regard to public health. From 1920 to 1923, prior to the child health demonstration, Clarke County was steadily increasing its health service and budget. From 1924 to 1928, during the demonstration, this trend continued and was somewhat accelerated. In 1928 the appropriating agencies reversed their policy and began to decrease health service and budget. The health department budget for 1930 has not, at this writing, been fixed, but, on the basis of the health personnel already authorized for the school year 1929-1930, it appears that the total health expenditures for 1930 will be less than those for 1929. The trend of appropriations during the entire period (omitting subsidies from the Commonwealth Fund) is shown in *Chart 10*, and details are given in Tables 17 and 18 on pages 167 and 168. While health appropriations are now greatly in excess of what they were ten years ago, so that at present there is a clear net gain, it is impossible to foretell at what level they will be stabilized.

The Machinery of Appropriations

As a matter of record, the official action of the appropriating bodies with reference to public health expenditures during and after the demonstration will be summarized here.

The responsibility for shaping public health policy rests primarily with the Board of Health, which since 1926 has served both county and city and includes in its membership: from the county, the superintendent of schools, the chairman of the Board of Commissioners of Roads and Revenues, and a "reputable physician elected by the Grand Jury"; and from the city, the mayor and three members

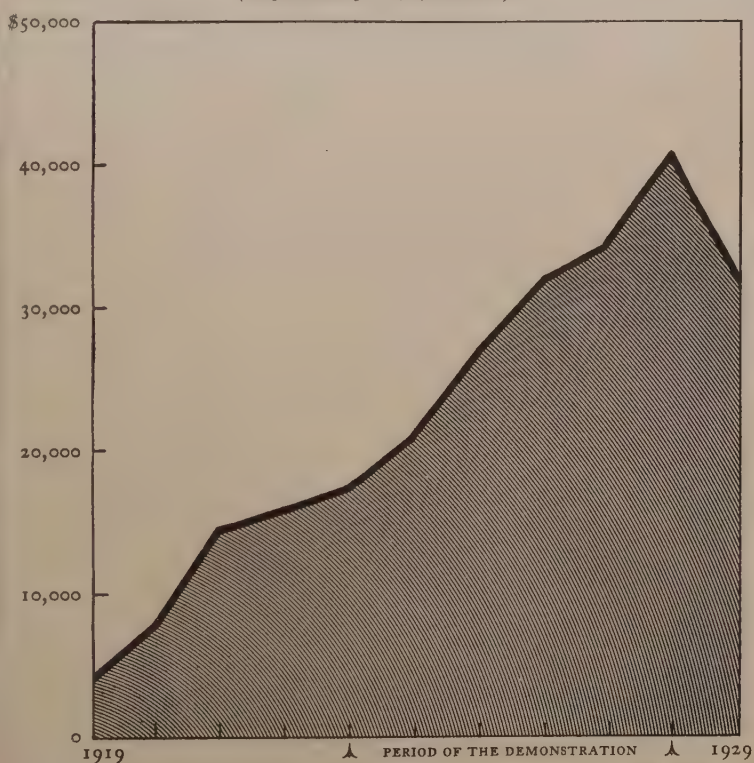
nominated by the mayor and elected by the City Council, two of whom shall be women. The state law establishing this consolidated board provides that:

It shall be the duty of the Department of Health of Clarke County at its regular January session to determine and fix the sum of money necessary for the adequate functioning of the department, and the amount so fixed shall be certified to the Board of Commissioners of Roads and Revenues and to the

Chart 10

EXPENDITURES FROM LOCAL FUNDS FOR PUBLIC HEALTH SERVICES IN CLARKE COUNTY, 1919-1929

(Expenditures for 1929 estimated)



governing body of the city of Athens, and said taxing bodies of said county and city of Athens shall provide equal portions of the amount so certified.

While on its face this law requires the City Council and the County Commissioners to provide the funds requisitioned by the Board of Health, this mandatory provision has not been tested in the courts and has been ignored in local practice. In recent years the City Council has deferred action on budget matters until well into the fiscal year, so that an interval of considerable uncertainty usually occurs between the end of one fiscal year and the determination of the budget. In 1928, indeed, no action of record was taken by the City Council at any time with reference to the health department budget as a whole, though by vote of the council the mayor was instructed how to proceed in handling certain detailed vouchers. Practically, therefore, health expenditures are controlled by the County Commissioners and the City Council, and the latter body has carried this responsibility with a high degree of informality.

Certain public health expenditures relating to the schools fall under the control of the Athens Board of Education which is elected by the City Council. The Board fixes its own budget within the limits of a special tax levy authorized by the City Council. While some steps looking toward consolidation of the city and rural school systems have been taken, they are as yet entirely distinct in administration. Aside from minor expenditures for school sanitation and equipment, the county Board of Education has not been concerned in public health appropriations.

The First Demonstration Year

The child health demonstration was awarded to Athens and Clarke County, as has been said, on vigorous application from the community. The City Council was not formally

represented among the agencies which joined in this application. The chairman of the Clarke County Board of Health wrote on June 2, 1923, as follows:

Our board is unanimous in requesting you to select Athens for your demonstration and pledge you our hearty cooperation if we are so fortunate as to secure the demonstration.

The attitude of the Board of Education is indicated by a letter from its secretary dated October 3, 1923, when the award had been made:

The Board of Education, in common with the other civic organizations of Athens and the community at large, is deeply appreciative of your decision to locate one of your child health demonstrations in our city and at its last regular meeting, by unanimous vote, passed a resolution pledging its fullest support and cooperation in your undertaking to promote child health in particular and the well-being of the community in general.

These promises of cooperation were speedily translated into action. The Athens Board of Health asked and secured from the City Council funds to employ a full-time nurse and a full-time bacteriologist,¹ and the county Board of Health continued, at its own expense, to employ a sanitary inspector who had previously been provided through a subsidy from the United States Public Health Service. The Athens Board of Education created the position of health educator and made an appropriation toward the salary of this worker. The city government provided office space for the demonstration staff in the city hall. City and county nurses were placed under the administrative direction of the demonstration so that unified service might be given.

Second Demonstration Year

The summer of 1925 was a trying time in Clarke County. A long-continued drought ruined the crops and reduced the

¹ In order to begin this service promptly, the demonstration paid the salary of the bacteriologist for three months before the city appropriation became available.

farmers to such straits that the whole economic structure of the community felt the effect. Three banks failed. In spite of the stringency which resulted, the city and county appropriations for health work were maintained without cut, and the City Council added to its health budget a small appropriation toward the salary of the oral hygienist. The Board of Education, which had already provided scales in the colored schools as an aid to the program of health teaching, found about a thousand dollars for improved toilet facilities at one white school in response to suggestions growing out of the health education service.

Third Demonstration Year

The consolidation of the city and county Boards of Health took effect at the beginning of 1926. During the year the health officer, Dr. J. D. Applewhite, who had done much to forward health work in the county, resigned and was succeeded by Dr. B. B. Bagby, a pioneer public health worker who had made a colorful reputation in Virginia. The demonstration began active negotiations with the new Board of Health for the take-over of the three nurses who were still on the Commonwealth Fund payroll, but whose place in the work of the health department and the schools appeared to be well established. The Board of Health, however, felt unable to provide for these nurses in its budget for 1927. A newly elected mayor had announced that he proposed to stabilize the city's finances by reducing an existing overdraft,² and the Board of Health complied with the request made to all city departments not to ask for more money.

The Board of Education continued its share of the salary of the health educator and also provided, in this year, for a male instructor of physical education for the boys of the

² This was wiped out and a cash surplus accumulated by 1928.

junior high school, an addition to the staff which indirectly strengthened the health education program.

Fourth Demonstration Year

Except for a slight subsidy in 1925, the salary of the oral hygienist was carried completely by the demonstration until the fall of 1927, when, on the initiative of local dentists, the Athens Board of Education voted to assume the full salary with the beginning of the school year.

No major step toward permanently increasing the local health staff had been taken by the City Council or County Commissioners since 1924. The demonstration was still carrying three of the five nurses who were regularly serving the health department and the schools. The question of providing for their continued service was again considered by the Board of Health, which decided that they were indispensable to its program and voted to include their salaries and transportation expenses in its budget for 1928.

The County Commissioners approved the health department budget as submitted. Half the funds thus being assured, and the law requiring the city to appropriate the other half, the Board of Health assumed the salaries of the three nurses as of January 1, 1928, pending formal action by the City Council.

Final Demonstration Year

Early in the year the council temporarily authorized the mayor to approve vouchers for salary payments to the three nurses newly employed by the Board of Health. In May, still without any action on a budget, the council notified the Board of Health that such payments would be discontinued and gave the health officer to understand that his revenues for the year 1928 would not exceed those for 1927. The threatened destruction of the nursing staff brought sharp

protests from the public, particularly the women's organizations. The City Council thereupon permitted the cost already incurred for the nurses to stand as a net addition to the Board of Health allowance. By the gift of funds from the Tuberculosis Association and by extraordinary economies—including a long leave of absence without pay for the health officer, who was ill—the Board of Health managed to find funds to keep the nurses on duty through the rest of the year.

Plans for Permanent Staff

In the fall the Board of Health presented its budget for 1929 to the County Commissioners, asking for \$27,000, which would have included the salary and transportation cost of a nursing staff of five. After some consideration the commissioners approved a budget of \$22,080, half of which they voted, leaving the other half as usual for the city to supply. They indicated their temper at the same time by announcing that they could no longer support the County Tuberculosis Sanatorium and suggesting that competitive bids be asked from both local hospitals for the care of the county's indigent sick.

By economy and by dropping the salary of a third sanitary inspector, the health officer was able to employ three nurses for 1929—one more than the two who were on the payroll in 1924. To save the tuberculosis sanatorium for public health use, the Tuberculosis Association was incorporated and leased the plant from the county at a nominal rent, counting on supporting it with the fees from private patients, some small resources of its own, and a per diem payment from the county for a limited number of indigent cases.

In the schools adjustments looking toward a permanent program had been made by the end of 1928. The health educator was invited to give half time to a new nursery

school established by the College of Agriculture; the Board of Education, approving this arrangement, continued to pay for the other half of her time. A colored teacher who had been sent away on a scholarship given by the demonstration was appointed health supervisor in the colored schools and the Board of Education provided full salary for her. The physical educator employed by the demonstration was from the beginning considered to be a temporary worker whose task was to pave the way for the teachers themselves to carry the full responsibility of organized play. Her supervisory duties were taken over by the health educator. An oral hygienist was again appointed on full salary from the Board of Education. The sum of \$600 was provided for part-time medical service at school examinations.

None of these arrangements provided for any assistance to the health officer in maintaining the work of the pediatrician at the health centers. For a few months the nursery school of the College of Agriculture paid half the pediatrician's salary for service there, but no basis was found for continuing him on the public health staff. Health supervision of infants and preschool children was referred to the Athens General Hospital, where a free health center was planned for indigent children, and to the private practitioners of the community.

After the Demonstration

The public health staff at the beginning of 1929, after the end of the demonstration, included a full-time health officer, two full-time sanitary inspectors, a full-time bacteriologist, three full-time nurses, a clerk, and, in the schools, a half-time health educator, a full-time colored assistant to the health educator, a full-time oral hygienist, and part-time medical service for health examinations. Of these workers, two nurses and all the school health staff represented net gains as compared with 1923, and laboratory service was on full-time instead of part-time basis.

The school staff was, however, a very temporary addition to the health resources of Athens. In May, 1929, the entire school system was the object of a ruthless drive for economy. The retirement of the superintendent was made the occasion for a general overhauling which left little but the principals and the regular classroom teachers, with most of the progressive projects stripped from the curriculum. A night school for Negroes and a special class for retarded children were abolished. The oral hygienist, the health educator, her colored assistant, two manual training teachers, the domestic science teacher, the boys' physical education leader, the dramatic teacher, the music and orchestra teacher, one teacher of commercial subjects, and two secretaries were retired. The total budget, according to press reports, was cut \$12,000. The Board of Education continued to provide for free milk, however, and it was assumed that principals and teachers would carry on the established health teaching program without supervision.

Volunteer physicians held weekly conferences for white and colored children at the City Hall in 1929. A successful campaign was made to examine children about to enter school.

The experience of Athens and Clarke County from 1924 to 1928 demonstrates, in the familiar words of Dr. Hermann Biggs, that public health is purchasable. Conspicuous items in this experience have already been cited. The lives of 124 children seem to have been saved. For the mothers who had care, the deathrate at childbirth was cut in half. For the babies who had care, the deathrate under one month was cut one-fourth, the deathrate between one month and one year was cut almost three-fourths.

It is of course necessary for every community to decide for itself whether such public health gains are worth purchasing.

APPENDIX A

PERSONNEL

THE health officer of Clarke County at the beginning of the demonstration was Dr. J. D. Applewhite. In 1926 he was succeeded by Dr. B. B. Bagby, who served till after the conclusion of the demonstration.

The workers who were administratively attached to the demonstration are listed below. Some of them were paid in part or entirely by local agencies, including the city of Athens, Clarke County, the Athens Board of Education, and the Clarke County Tuberculosis Association.

Director of Demonstration

BERNARD W. CAREY, M.D., 1924-1928

Director of Medical Service

THOMAS B. GAY, M.D., 1924-1927

E. D. ANDREWS, M.D., 1927-1928

Director of Nursing Service

MARGARET HUTCHINSON, 1924

VIRGINIA LEWIS, 1925-1926

MRS. MYRA CLOUDMAN, 1926-1928

GERTRUDE SHEPARD, December 1928-post-demonstration period

Director of Health Education

ERNA E. PROCTOR, 1924-post-demonstration period

Director of Physical Education

WILLIE DEAN ANDREWS, 1924-1928

Statistician

C. EDITH KERBY, 1924-1928

Oral Hygienist

CORONA TORREY, 1924-1926

LORETTA COLLINS, 1926-1927

ORIAN B. STEVENS, 1927-1928

HELEN HOWDEN, 1928-post-demonstration period

*Nurses**(Average staff, five plus)*

FLORENCE GREGORY

KATHERINE KREITZENBACK

GEORGIA HARRISON

LAURA RHODES

MARGARET BELL

RUTH CROWLEY

MARY BURNS

ANNE ROSS

HELEN E. BOND

MAGDALENE MCGINLEY

GERTRUDE SHEPARD

ELIZABETH GOFORTH

LOUISE WHITESIDE

VIRGINIA ANDERSON

LORA BATTIN

MADELINE K. WILKINSON

CLARA BARDLEY

ETHEL BAUMGARDNER

MAUDE BIRD

FLORENCE MCNEILL

*Secretarial and Clerical Staff**(Average staff, five)*

MILDRED RHODES

BEATRICE ABRAMS

MARY FLEMING

LOIS WESTER

FLORENCE WHITWORTH

S. B. MAHAFFY

SELINA PHILLIPS

MADELINE WATERS

FLORENCE BISHOP

BEATRICE ADAMS

NELLIE GRIFFITH

SARAH PRICE

FANNIE MURRAY

MARGUERITE DUNSON

ZILAH HAMPTON

PRISCILLA PAINE VAN DIVIERE

ELIZABETH BOYKIN

LUCILE BURKE

MARY STEPHENSON

FRANCES MYERS

APPENDIX B

STATISTICAL SUMMARIES

VITAL STATISTICS

TABLE I

BIRTHS AND DEATHS

	NUMBER			RATE PER 1,000			POPULATION	
	<i>Clarke County</i>			<i>Clarke County</i>			<i>U. S. Reg. Area</i>	
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>White</i>	<i>Colored</i>
<i>Births</i>								
1920 . . .	508	341	167	19.3	24.3	13.7	23.5	27.0
1921 . . .	565	381	184	21.3	26.7	15.0	24.0	27.9
1922 . . .	544	376	168	20.3	25.9	13.6	22.2	26.0
1923 . . .	580	412	168	21.4	27.9	13.6	22.1	26.3
1924 . . .	562	375	187	20.7	25.4	15.1	22.2	27.4
1925 . . .	520	317	203	20.3	22.9	17.2	21.1	26.7
1926 . . .	475	279	196	19.7	21.6	17.5	20.3	26.2
1927 . . .	482	284	198	19.8	21.7	17.6	20.2	25.0
1928 . . .	529	316	213	21.6	23.8	18.9		
<i>Deaths</i>								
1920 . . .	444	208	236	16.9	14.8	19.3	12.6	18.0
1921 . . .	362	140	222	13.6	10.0	18.1	11.2	16.0
1922 . . .	399	177	222	14.9	12.2	18.0	11.4	15.7
1923 . . .	387	174	213	14.3	11.8	17.2	11.8	17.1
1924 . . .	355	179	176	13.1	12.1	14.2	11.2	17.8
1925 . . .	358	167	191	14.0	12.0	16.2	11.2	18.2
1926 . . .	353	167	186	14.6	12.9	16.6	11.6	18.8
1927 . . .	375	172	203	15.4	13.1	18.1	10.8	17.3
1928 . . .	436	206	230	17.8	15.5	20.4		

TABLE 2
INFANT MORTALITY

	NUMBER			RATE PER 1,000			LIVE BIRTHS	
	Clarke County			Clarke County			U. S. Reg. Area	
	Total	White	Colored	Total	White	Colored	White	Colored
<i>Deaths under one year</i>								
1920 . . .	55	33	22	*	96.8	*	82.1	131.7
1921 . . .	54	25	29	*	65.6	*	72.5	108.5
1922 . . .	46	21	25	*	55.9	*	73.2	110.0
1923 . . .	51	26	25	*	63.1	*	73.5	117.4
1924 . . .	58	26	32	*	69.3	*	66.8	112.9
1925 . . .	40	18	22	76.9	56.8	108.4	68.3	110.8
1926 . . .	33	15	18	69.5	53.8	91.8	70.0	111.8
1927 . . .	46	18	28	95.4	63.4	141.4	60.6	100.1
1928 . . .	43	18	25	81.3	57.0	117.4	64.0	106.2
<i>Deaths under one month</i>								
1920 . . .	24	16	8	*	46.9	*	40.4	55.0
1921 . . .	30	16	14	*	42.0	*	38.7	50.3
1922 . . .	26	14	12	*	37.2	*	38.8	49.9
1923 . . .	33	20	13	*	48.5	*	38.6	49.9
1924 . . .	30	15	15	*	40.0	*	37.4	51.2
1925 . . .	24	11	13	46.2	34.7	64.0	36.8	49.5
1926 . . .	18	10	8	37.9	35.8	40.8	37.1	47.9
1927 . . .	23	9	14	47.7	31.7	70.7	35.0	46.1
1928 . . .	24	10	14	45.4	31.6	65.7	35.7	48.8
<i>Deaths one month and under one year</i>								
1920 . . .	31	17	14	*	49.9	*	41.7	76.7
1921 . . .	24	9	15	*	23.6	*	33.8	58.2
1922 . . .	20	7	13	*	18.6	*	34.4	60.1
1923 . . .	18	6	12	*	14.6	*	34.9	67.5
1924 . . .	28	11	17	*	29.3	*	29.4	61.7
1925 . . .	16	7	9	30.8	22.1	44.3	31.5	61.3
1926 . . .	15	5	10	31.6	18.0	51.0	32.9	63.9
1927 . . .	23	9	14	47.7	31.7	70.7	25.7	54.0
1928 . . .	19	8	11	35.9	25.3	51.6	28.3	57.4

* Rates inaccurate because of incomplete reporting.

TABLE 3
MATERNAL MORTALITY
RESIDENTS ONLY

	NUMBER			RATE PER 1,000			LIVE BIRTHS	
	<i>Clarke County</i>			<i>Clarke County</i>			<i>U. S. Reg. Area</i>	
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>White</i>	<i>Colored</i>
1920 . . .	6	4	2	*	12.5	*	7.6	12.8
1921 . . .	8	2	6	*	5.5	*	6.4	10.8
1922 . . .	4	1	3	*	2.8	*	6.3	10.7
1923 . . .	8	3	5	*	8.7	*	6.3	10.9
1924 . . .	3	2	1	*	5.8	*	6.1	11.8
1925 . . .	7	2	5	14.1	6.8	24.7	6.0	11.6
1926 . . .	4	0	4	8.9	0.0	20.7	6.2	10.7
1927 . . .	8	4	4	17.0	14.6	20.4	5.9	11.3
1928 . . .	8	1	7	15.6	3.3	33.3		

* Rates inaccurate because of incomplete birth reporting.

TABLE 4
TUBERCULOSIS MORTALITY

	NUMBER OF DEATHS			RATE PER 100,000			POPULATION	
	<i>Clarke County</i>			<i>Clarke County</i>			<i>U. S. Reg. Area</i>	
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>White</i>	<i>Colored</i>
1920 . . .	21	5	16	80.0	35.6	130.9	100.1	263.9
1921 . . .	37	9	28	139.4	63.0	228.3	85.9	244.1
1922 . . .	32	6	26	119.2	41.3	211.2	83.7	224.9
1923 . . .	36	6	30	132.7	40.6	242.9	80.9	219.9
1924 . . .	27	9	18	99.5	60.9	145.7	77.0	226.5
1925 . . .	43	12	31	167.7	86.6	263.2	72.7	231.0
1926 . . .	33	8	25	136.7	61.8	223.2	72.9	234.3
1927 . . .	41	14	27	168.4	106.7	240.4	67.3	218.1
1928 . . .	36	13	23	146.7	97.8	204.3		

TABLE 5
DEATH RATES PER 100,000 POPULATION
FOR CERTAIN IMPORTANT CAUSES

<i>Causes of Death</i>	CLARKE COUNTY				U. S. REG. AREA	
	<i>White</i>		<i>Colored</i>		<i>White</i>	<i>Colored</i>
	<i>1920-23</i>	<i>1924-28</i>	<i>1920-23</i>	<i>1924-28</i>	<i>1924-27</i>	<i>1924-27</i>
Communicable diseases ³ (1-10) . .	50.1	22.2	101.8	43.3	30.4	70.2
Influenza (11) . .	43.4	47.1	46.8	60.5	25.5	54.7
Tuberculosis (31-37)	45.1	82.4	203.5	214.5	72.5	227.5
Syphilis (38)	3.5	2.9	26.5	29.4	5.4	36.9
Cancer (43-49) . .	71.1	92.7	63.1	51.9	97.1	59.7
Pellagra (54)	15.6	16.2	22.4	22.5	1.8	20.9
Diabetes (57) . .	27.8	19.1	20.3	13.8	17.8	11.7
Cerebral hemorrhage and softening (74, 83) . .	71.1	82.4	83.4	129.7	86.3	92.7
Heart diseases (87-90)	126.6	154.4	203.5	261.2	187.3	213.0
Pneumonia (100, 101)	86.7	66.2	179.1	98.6	86.1	171.3
Diarrhea and enteritis (113, 114) . .	39.9	42.6	34.6	41.5	31.1	61.0
Nephritis (128, 129)	81.5	135.3	187.2	140.1	89.3	144.2
Congenital causes (159-163) . . .	93.7	82.4	75.3	93.4	71.1	90.7
Accidents and external causes (175-196, 201-203)	85.0	94.1	91.6	79.6	76.1	93.6
Unknown or ill-defined (204, 205)	33.0	27.9	71.2	70.9	9.6	100.1

³ For detail on annual number of deaths from certain communicable diseases see page 110.

STAFF ACTIVITIES

Medical Service

TABLE 6

HEALTH EXAMINATIONS OF INFANTS AND PRE-SCHOOL CHILDREN

	INFANT			PRESCHOOL		
	Total	White	Colored	Total	White	Colored
<i>Number of children examined</i>						
1924	150	90	60	848	556	292
1925	161	114	47	546	410	136
1926	166	97	69	438	356	82
1927	206	113	93	590	434	156
1928 ⁴	149	83	66	432	338	94
Yearly average, 1925-28 ⁴	171	102	69	502	385	117
<i>Number of examinations</i>						
1924	155	92	63	877	566	311
1925	418	250	168	710	509	201
1926	508	289	219	666	464	202
1927	606	362	244	1085	755	330
1928	414	221	193	951	619	332
Yearly average, 1925-28	487	281	206	853	587	266
<i>Average number of examinations per child</i>						
1924	1.0	1.0	1.1	1.0	1.0	1.1
1925	2.6	2.2	3.6	1.3	1.2	1.5
1926	3.1	3.0	3.2	1.5	1.3	2.5
1927	2.9	3.2	2.6	1.8	1.7	2.1
1928	2.8	2.7	2.9	2.2	1.8	3.5
Yearly average, 1925-28	2.9	2.8	3.1	1.7	1.5	2.4
<i>Percentage of population examined</i>						
1924	15.5	14.6	16.9	28.2	31.4	23.7
1925	16.6	18.6	13.2	18.2	23.1	11.1
1926	18.3	18.1	18.5	15.5	21.8	6.9
1927	23.1	21.8	25.1	20.9	26.8	13.0
1928	15.9	14.9	17.4	15.2	20.5	7.8
Yearly average, 1925-28	18.5	18.4	18.6	17.5	23.1	9.7

⁴ The number of examinations in 1924 was increased by those made by a special research group and is omitted from the yearly averages.

Medical Service (continued)

TABLE 7

HEALTH EXAMINATIONS OF CHILDREN IN ELEMENTARY SCHOOLS

	CITY			COUNTY		
	Total	White	Colored	Total	White	Colored
<i>Number of examinations by school year</i>						
1924-1925	2252	1359	893	641	570	71
1925-1926	1652	1049	603	955	553	402
1926-1927	1400	1212	188	914	432	482
1927-1928	1861	1196	665	608	279	329
Yearly average	1791	1204	587	780	459	321
<i>Percentage of school enrollment examined</i>						
1924-1925	72.9	79.9	64.2	48.0	87.7	10.4
1925-1926	56.1	63.5	46.6	75.7	88.3	63.2
1926-1927	47.7	73.4	14.7	75.4	68.2	83.1
1927-1928	61.3	70.2	49.9	48.7	46.7	50.5
Yearly average	59.5	71.8	51.3	62.0	72.7	51.8
<i>Percentage of examinations in presence of parents</i>						
1924-1925	39.7	42.7	35.2	3.0	3.3	0.0
1925-1926	23.6	25.5	20.4	1.8	3.1	0.0
1926-1927	41.0	40.1	46.8	52.1	27.3	74.3
1927-1928	37.9	40.6	33.1	44.2	18.3	66.3
Yearly average	35.6	37.2	33.9	25.0	13.0	44.9

Nursing Service

TABLE 8

INDIVIDUALS VISITED BY AGE GROUP

	NUMBER OF INDIVIDUALS VISITED			PERCENTAGE IN POPULATION AGE GROUP VISITED		
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>
<i>Infant</i>						
1924	87	69	18	8.9	11.2	5.1
1925	261	178	83	26.9	28.9	23.4
1926	299	153	146	32.9	28.6	39.1
1927	378	184	194	42.5	35.5	52.3
1928	416	214	202	44.3	38.3	53.3
Yearly average, 1925-28 ⁵	338	182	156	36.7	32.8	42.0
<i>Preschool</i>						
1924	472	303	169	15.7	17.1	13.7
1925	420	273	147	14.0	15.4	12.0
1926	406	289	117	14.3	17.7	9.7
1927	564	376	186	20.0	23.3	15.6
1928	613	455	158	21.5	27.6	14.4
Yearly average, 1925-28	501	348	153	17.5	21.0	12.9
<i>School</i>						
1924	427	235	192	9.7	10.0	9.3
1925	779	586	193	17.6	24.9	9.3
1926	1248	1002	246	29.7	44.0	12.8
1927	1168	859	309	28.2	37.6	16.6
1928	1175	860	315	27.4	37.4	15.9
Yearly average, 1925-28	1093	827	266	25.7	36.0	13.7
<i>Adult</i>						
1924	484	272	212	2.8	2.9	2.7
1925	758	390	368	4.3	4.1	4.6
1926	712	371	341	4.1	3.9	4.3
1927	643	275	368	3.7	2.9	4.6
1928	764	359	405	4.4	3.8	5.1
Yearly average, 1925-28	719	349	370	4.1	3.7	4.7

⁵ Since the nursing staff was in process of organization during 1924, this year is omitted from averages.

Nursing Service (continued)

TABLE 9

FIELD VISITS BY TYPE OF SERVICE AND AGE GROUP

	1924	1925	1926	1927	1928
<i>Field Visits: Total</i>	2,902	8,951	12,879	13,763	13,492
<i>Maternity Service: Total</i>	48	1,305	2,397	2,005	1,905
Prenatal	28	591	902	837	785
Postnatal: <i>Total . . .</i>	20	714	1,495	1,168	1,120
Through 10th day .	18	602	979	622	626
After 10th day . .	2	112	516	546	494
<i>Health Supervision: Total</i>	926	2,698	5,617	6,780	6,112
<i>Infant: Total</i>	122	1,090	1,824	1,915	1,992
Under one month .	23	595	1,193	872	844
One month and over	99	495	631	1,043	1,148
Preschool	440	521	644	1,193	1,631
School	364	1,087	3,149	3,672	2,489
<i>Tuberculosis Control: Total</i>	1,833	2,391	1,402	1,819	2,048
Infant	0	19	14	11	13
Preschool	125	169	62	130	249
School	701	579	339	641	858
Adult	1,007	1,624	987	1,037	928
<i>Venereal Disease Control:</i>					
<i>Total</i>	0	45	156	533	784
Infant	0	0	0	0	11
Preschool	0	0	6	25	93
School	0	0	8	198	124
Adult	0	45	142	310	556
<i>Other Communicable Diseases: Total</i>	65	608	1,291	767	868
Infant	0	50	54	17	48
Preschool	4	188	393	241	311
School	27	178	636	418	375
Adult	34	192	208	91	134
<i>Care of Sick (Non-communicable): Total .</i>	30	1,904	2,016	1,859	1,775
Infant	0	117	121	65	74
Preschool	1	234	312	150	170
School	10	327	266	250	311
Adult	19	1,226	1,317	1,394	1,220

Nursing Service (continued)

TABLE 10

PERCENTAGE OF TOTAL VISITS BY TYPE OF SERVICE

	MATERNITY SERVICE			INFANT HEALTH SUPERVISION		
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>
1925	14.6	16.9	10.8	12.2	15.3	6.8
1926	18.6	14.1	26.6	14.2	11.5	18.9
1927	14.5	9.6	22.1	13.9	11.5	17.5
1928	14.1	10.2	19.8	14.8	11.8	19.1
Yearly average	15.5	12.7	19.8	13.8	12.5	15.6
	PRESCHOOL HEALTH SUPERVISION			SCHOOL HEALTH SUPERVISION		
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>
1925	5.8	6.4	4.8	12.1	16.9	4.3
1926	5.0	5.8	3.6	24.4	31.1	12.6
1927	8.7	8.4	9.0	26.7	34.8	14.5
1928	12.1	14.0	9.4	18.4	23.5	11.1
Yearly average	7.9	8.7	6.7	20.4	26.6	10.6
	TUBERCULOSIS CONTROL			VENEREAL DISEASE CONTROL		
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>
1925	26.7	19.5	38.9	0.5	0.1	1.1
1926	10.9	11.4	10.0	1.2	0.5	2.5
1927	13.2	15.4	9.9	3.9	0.3	9.2
1928	15.2	17.9	11.3	5.8	1.5	12.0
Yearly average	16.5	16.2	17.5	2.9	0.6	6.2
	OTHER COMMUNICABLE DISEASE CONTROL			CARE OF SICK (NON-COMMUNICABLE)		
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>
1925	6.8	4.9	10.0	21.3	20.0	23.4
1926	10.0	10.9	8.5	15.7	14.8	17.3
1927	5.6	6.1	4.9	13.5	13.8	12.9
1928	6.4	8.3	3.7	13.2	12.9	13.6
Yearly average	7.2	7.6	6.8	15.9	15.4	16.8

Nursing Service (continued)

TABLE II

AVERAGE NUMBER OF VISITS PER INDIVIDUAL BY TYPE OF SERVICE

	MATERNITY SERVICE			INFANT HEALTH SUPERVISION		
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>
1925	7.8	8.9	5.8	4.5	5.2	3.0
1926	10.4	11.2	9.8	6.4	6.6	6.1
1927	7.9	8.5	7.5	5.2	5.3	5.1
1928	7.4	8.5	6.8	4.9	4.6	5.3
Yearly average	8.4	9.3	7.5	5.3	5.4	4.9
	PRESCHOOL HEALTH SUPERVISION			SCHOOL HEALTH SUPERVISION		
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>
1925	1.8	1.7	2.1	2.3	2.2	2.8
1926	2.0	1.9	2.3	3.0	3.0	3.0
1927	2.4	2.1	3.0	3.6	3.8	3.0
1928	3.2	2.9	3.8	2.5	2.5	2.5
Yearly average	2.4	2.2	2.8	2.9	2.9	2.8
	TUBERCULOSIS CONTROL			VENEREAL DISEASE CONTROL		
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>
1925	3.6	3.7	3.5	5.0	2.0	7.4
1926	4.3	4.8	3.5	5.4	9.5	4.7
1927	6.8	7.3	6.0	9.2	2.9	10.4
1928	6.7	7.6	5.2	8.6	10.9	8.3
Yearly average	5.4	5.9	4.6	7.1	6.3	7.7
	OTHER COMMUNICABLE DISEASE CONTROL			CARE OF SICK (NON-COMMUNICABLE)		
	<i>Total</i>	<i>White</i>	<i>Colored</i>	<i>Total</i>	<i>White</i>	<i>Colored</i>
1925	7.2	5.9	8.8	7.3	6.5	9.0
1926	5.5	5.3	6.0	6.6	6.8	6.4
1927	5.5	5.6	5.3	6.1	7.1	4.9
1928	4.6	4.4	5.3	5.0	5.1	4.7
Yearly average	5.7	5.3	6.4	6.3	6.4	6.3

Nursing Service (continued)

TABLE 12

SCHOOL NURSING, EDUCATIONAL AND ORGANIZATION ACTIVITIES

	1925	1926	1927	1928
<i>School nursing</i>				
Number of visits to schools	1,137	1,084	1,799	1,637
Number of classroom inspections	255	23	33	30
Number of children in classroom inspections	5,364	627	641	561
Number of individual inspections:				
<i>Total</i>	3,245	7,989	8,618	11,257
Children excluded	301	846	436	746
Children readmitted	1,604	2,169	1,431	1,478
Children treated	527	2,245	1,288	3,191
Other services	813	2,729	5,463	3,702
Number of conferences with teachers	569	1,660	1,514	2,288
Number of classroom talks and lessons	138	16	31	24
<i>Educational and organization activities</i>				
Midwife instruction and supervision:				
Number of class lessons	9	20	20	10
Class enrollment	86	61	34	30
Number of field visits for midwife supervision	40	86	68	102
Number of certified midwives	6	12	11	18
Number of community meetings addressed	48	22	37	12
Approximate audience	2,032	687	1,288	279
Number of other meetings attended	32	34	63	47
Number of field visits for community organization	556	328	277	384

Nursing Service (continued)

TABLE 13

TIME DISTRIBUTION

	1925	1926	1927	1928	YEARLY AVERAGE
<i>Hours Employed: Total . . .</i>	13,040	12,535	11,373	10,655	11,901
Field nurses in generalized service	10,770	11,264	11,319	10,655	—
Special tuberculosis nurse	2,100	1,225	0	0	—
Nursing supervisor for relief work	170	46	54	0	—
<i>Field Service: Total . . .</i>	5,690	6,209	5,943	5,351	5,798
Health center service	695	576	739	591	650
School service	1,548	1,516	1,557	1,483	1,526
Nursing visits	3,447	4,117	3,647	3,277	3,622
<i>Related Service: Total . .</i>	7,350	6,326	5,430	5,304	6,103
Educational and organization activities	872	859	906	880	879
Office work	2,216	2,038	1,743	1,655	1,913
Travel	2,684	1,857	1,767	1,761	2,017
Vacation and sick leave	1,578	1,572	1,014	1,008	1,293
<i>Percentage Distribution: Total</i>	100.0	100.0	100.0	100.0	100.0
<i>Field Service: Total . . .</i>	43.6	49.5	52.3	50.2	48.7
Health center service	5.3	4.6	6.5	5.5	5.5
School service	11.9	12.1	13.7	13.9	12.8
Nursing visits	26.4	32.8	32.1	30.8	30.4
<i>Related Service: Total . . .</i>	56.4	50.5	47.7	49.8	51.3
Educational and organization activities	6.7	6.9	8.0	8.2	7.4
Office work	17.0	16.3	15.3	15.5	16.1
Travel	20.6	14.8	15.5	16.5	16.9
Vacation and sick leave	12.1	12.5	8.9	9.5	10.9

Nursing Service (continued)

TABLE 14

AVERAGE FIELD TIME AND SALARY COST PER YEAR
BY TYPE OF SERVICE (1925-1928)

	AVERAGE HOURS OF FIELD SERVICE PER YEAR	AVERAGE SALARY COST PER YEAR	PERCENTAGE DISTRIBUTION
<i>Total Service</i> (5.4 nurses) . . .	5,798	\$10,159	100.0
Health Center Service . . .	650	1,104	10.9
<i>School Service: Total</i> . . .	1,526	2,583	25.4
Health examinations . . .	531	906	8.9
Other	995	1,677	16.5
<i>Nursing Visits by Type of Service: Total</i>	3,622	6,472	63.7
<i>Maternity Service: Total.</i>	619	1,035	10.2
Prenatal	257	432	4.3
Postnatal: Total	362	603	5.9
Through 10th day . . .	259	434	4.3
After 10th day	103	169	1.7
<i>Child Health Service: Total</i>	1,249	2,079	20.5
<i>Infant: Total</i>	413	694	6.8
Under one month . . .	229	385	3.8
One month and over . .	184	309	3.0
Preschool	201	337	3.3
School	635	1,048	10.3
<i>Communicable Disease Control: Total</i>	1,076	2,203	21.7
Epidemic diseases . . .	314	522	5.1
Tuberculosis	671	1,531	15.1
Venereal disease	91	150	1.5
<i>Care of sick (non-com- municable)</i>	678	1,155	11.4

Nursing Service (continued)

TABLE 15
 AVERAGE TIME AND SALARY COST FOR VISITS
 BY TYPE OF SERVICE (1925-1928)

	AVERAGE NUMBER OF MINUTES OF FIELD TIME PER VISIT	AVERAGE SALARY COST PER VISIT
<i>Total Visits</i>	<i>17.7</i>	<i>\$.53</i>
<i>Maternity Service</i>		
Prenatal	19.8	.55
Postnatal	19.3	.54
<i>Child Health Service</i>		
<i>Infants: Total</i>	<i>14.5</i>	<i>.41</i>
Under one month	15.7	.44
One month and over	13.3	.37
Preschool	12.1	.34
School	14.7	.40
<i>Communicable Disease Control</i>		
Epidemic diseases	21.3	.60
Tuberculosis	21.1	.59
Venereal disease	14.4	.40
<i>Care of Sick (non-communicable)</i>	<i>21.5</i>	<i>.61</i>

Nursing Service (continued)

TABLE 16

SPECIAL STUDY OF MATERNITY CARE BY YEAR OF CHILD'S BIRTH

	PRENATAL			POSTNATAL		
	Total	White	Colored	Total	White	Colored
<i>Number of maternity cases under nursing care</i>						
1925	90	63	27	95	62	33
1926	138	68	70	171	73	98
1927	132	49	83	163	49	114
1928	147	54	93	192	71	121
Yearly average	127	59	68	155	64	91
<i>Percentage of births during year under nursing care</i>						
1925	16.0	18.8	11.9	17.7	19.9	14.7
1926	27.2	23.4	32.3	35.7	27.4	46.0
1927	25.9	16.5	39.0	33.0	17.3	54.0
1928	26.1	16.6	39.2	35.4	22.9	51.9
Yearly average	23.7	18.9	30.5	30.5	21.9	41.7
<i>Percentage of maternity cases referred by physician⁶</i>						
1925	10.0	14.3	—	19.4	27.8	7.8
1926	4.3	4.4	4.3	13.2	29.4	5.6
1927	5.3	10.2	2.4	9.2	26.3	2.2
1928	1.4	1.9	1.1	9.7	22.2	—
Yearly average	5.3	7.7	2.0	12.9	26.4	3.9
<i>Percentage of maternity cases referred by midwife⁶</i>						
1925	12.2	—	40.7	19.4	5.6	38.4
1926	29.7	5.9	52.8	49.1	—	72.2
1927	26.5	2.0	41.0	61.3	10.5	82.6
1928	21.8	—	34.4	38.7	3.7	65.7
Yearly average	22.6	2.0	42.2	42.2	5.0	64.7

⁶ During this period about 76 per cent of total births each year were attended by physicians and 24 per cent by midwives. Among the white 98 per cent were attended by physicians and 2 per cent by midwives; among the colored 44 per cent by physicians and 56 per cent by midwives.

Nursing Service (concluded)

TABLE 16 (concluded)

SPECIAL STUDY OF MATERNITY CARE

	UNDER FIFTH MONTH OF PREGNANCY			DURING NINTH MONTH OF PREGNANCY		
	<i>Total White Colored</i>			<i>Total White Colored</i>		
<i>Percentage referred for nursing care</i>						
1925	7.8	9.5	3.7	20.0	17.5	25.9
1926	11.6	16.2	7.1	15.2	14.7	15.7
1927	14.4	12.2	15.7	10.6	18.4	6.0
1928	17.7	22.2	15.1	15.0	20.4	11.8
Yearly average	12.9	15.0	10.4	15.2	17.8	14.9
	PERCENTAGE WITH MEDICAL EXAMINATIONS			AVERAGE NUMBER OF MEDICAL EXAMINATIONS PER CASE		
	<i>Total White Colored</i>			<i>Total White Colored</i>		
<i>Extent of medical examinations during pregnancy</i>						
1925	39.5	46.3	22.7	1.9	2.0	1.4
1926	42.6	58.6	28.1	1.7	1.9	1.2
1927	46.7	68.6	36.1	1.7	1.7	1.7
1928	63.9	81.8	55.1	2.8	3.6	2.2
Yearly average	48.2	63.8	35.5	2.0	2.3	1.6

PUBLIC HEALTH EXPENDITURES

TABLE 17

TOTAL AND PER CAPITA EXPENDITURES FROM LOCAL FUNDS
1919-1928, AND APPROPRIATIONS 1929

TOTAL	Total	BOARD OF HEALTH			CITY BOARD OF		COUNTY	VOLUN-
		County	City	Federal and State	EDU- CATION	T. B. / SANA- TORIUM	AGENCIES	TARY
Total Expenditures								
1919	\$4,200	\$4,200	—	\$4,200	—	—	—	—
1920	7,744	6,819	\$1,563	5,148	\$108	—	—	\$925
1921	14,446	14,026	6,332	5,544	2,150	—	—	420
1922	15,785	15,785	7,130	6,715	1,940	—	—	—
1923	17,027	15,288	6,459	7,309	1,520	—	—	1,739
1924	20,788	16,916	7,350	8,866	700	\$1,320	—	2,552
1925	26,743	21,942	8,647	12,395	900	1,989	—	2,549
1926	31,900	19,913	9,507	9,506	900	2,247	\$7,600	2,140
1927	34,135	20,459	9,779	9,780	900	2,697	9,600	1,379
1928	40,335	25,939	12,520	12,519	900	3,894	9,600	902
1929	31,560	22,980	11,040	11,040	900	3,730	3,650	1,200
Per Capita Expenditures								
1919	\$.16	\$.16	—	\$.16	—	—	—	—
1920	.29	.26	\$.06	.20	—	—	—	\$.03
1921	.54	.53	.24	.21	\$.08	—	—	.01
1922	.59	.59	.27	.25	.07	—	—	—
1923	.63	.57	.24	.27	.06	—	—	.06
1924	.77	.63	.27	.33	.03	\$.05	—	.09
1925	1.04	.85	.34	.48	.03	.09	—	.10
1926	1.31	.82	.39	.39	.04	.09	\$.31	.09
1927	1.40	.84	.40	.40	.04	.11	.39	.06
1928	1.64	1.06	.51	.51	.04	.15	.39	.04
1929	1.28	.93	.45	.45	.03	.15	.15	.05

TABLE 18

TOTAL AND PER CAPITA EXPENDITURES FOR LOCAL HEALTH SERVICES
BY SOURCE OF FUNDS AND BY PURPOSE OF EXPENDITURE

	1924	1925	1926	1927	1928
<i>Total Expenditures</i> . . .	\$34,443	\$44,430	\$47,048	\$49,678	\$47,665
Local funds	20,788	26,743	31,900	34,135	40,335
Demonstration funds ⁷ .	13,655	17,687	15,148	15,543	7,330
<i>Salaries of technical staff:</i>					
<i>Total</i>	24,350	33,415	30,996	31,621	28,578
County health officer .	4,090	4,500	4,100	4,800	3,800
Members of city Board of Health	835	840	—	—	—
Pediatrician	3,000	3,500	3,500	3,500	3,500
Health inspectors . . .	4,730	5,600	5,600	5,600	5,225
Bacteriologist	2,025	2,500	2,433	2,500	2,500
Nurses	6,645	11,449	10,563	9,671	8,953
Health educator	1,800	1,800	1,800	2,400	2,700
Physical educator : . .	700	1,500	1,500	1,500	900
Oral hygienist	525	1,726	1,500	1,650	1,000
<i>Operating costs: Total</i> . .	10,093	11,015	8,452	8,457	9,017
Clerical salaries	1,500	1,723	1,800	1,775	1,800
Travel and transporta- tion	2,489	5,267	3,783	3,510	3,935
Other	6,104	4,025	2,869	3,172	3,282
<i>Tuberculosis Sanatorium and Children's Camp</i> . .	—	—	7,600	9,600	10,070

⁷ In addition to these expenditures from demonstration funds for local health services, there were expenditures for temporary demonstration purposes as follows: 1924, \$26,080; 1925, \$23,489; 1926, \$25,156; 1927, \$23,785; 1928, \$22,097. These include the total salaries of the demonstration director, nursing supervisor, statistician, and special clerks and also supplementary salary grants to the pediatrician, health educator, and physical educator, together with travel, transportation, and miscellaneous operating costs not chargeable to local service.

TABLE 18 (concluded)

TOTAL AND PER CAPITA EXPENDITURES FOR LOCAL HEALTH SERVICES
BY SOURCE OF FUNDS AND BY PURPOSE OF EXPENDITURE

	1924	1925	1926	1927	1928
<i>Per Capita Expenditures:</i>					
<i>Total</i>	1.27	1.73	1.94	2.04	1.94
Local funds	.77	1.04	1.31	1.40	1.64
Demonstration funds .	.50	.69	.63	.64	.30
<i>Salaries of technical staff:</i>					
<i>Total</i>	.90	1.30	1.28	1.30	1.16
Health officer and mem- bers of city Board of					
Health	.18	.21	.17	.20	.15
Pediatrician	.11	.14	.14	.14	.14
Health inspectors . . .	.17	.22	.23	.23	.21
Bacteriologist	.08	.10	.10	.10	.10
Nurses	.25	.44	.44	.40	.37
Health educator and physical educator . .	.09	.13	.14	.16	.15
Oral hygienist	.02	.06	.06	.07	.04
<i>Operating costs: Total</i> . .	.37	.43	.35	.35	.37
Clerical salaries . . .	.05	.07	.07	.07	.07
Travel and transporta- tion	.09	.21	.16	.15	.16
Other	.23	.15	.12	.13	.14
<i>Tuberculosis Sanatorium and Children's Camp</i>	—	—	.31	.39	.41

LANE MEDICAL LIBRARY

To avoid fine, this book should be returned on
or before the date last stamped below.

MAR 30 1931

Sept. 11

I609. Commonwealth fund.
C72 Child health demonstra-
1930 tion committee. Charter
NAME of child health. DATE DUE 72066

Dickson

E. Seligson

MA 30, 1931
Sept. 11

